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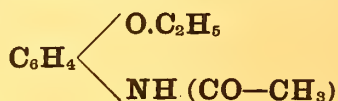
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THERAPEUTIC PROPERTIES.

IN HEALTHY PERSONS Phenacetine, according to Dr. Köbler, does not produce any ill-effects in doses of from 0.5—0.7 grm. (8—12 grains); but in all cases of pyrexia even relatively small doses of 0.3 grm. (5 grains) are never without perceptible antipyretic effects. To adults it is best administered in single doses of 0.6—0.7 grm. (10—12 grains), instead of smaller ones given repeatedly; no disagreeable after effects, such as nausea, vomiting, or cyanosis, were ever observed in 50 cases presenting various febrile conditions. On the contrary, at fever temperatures of 39.5—40.5 C. (103.1—104.8 F.) a reduction of 1.5—2.5 C. (2.7—4.5 F.) invariably ensued; the reduction is usually gradual, reaching its maximum in 4—6 hours, the rise is likewise gradual, extending over 8—10 hours. Decrease of temperature (Apyrexia) is usually obtained without sweat secretion, but the pulse improves and a pronounced euphoria ensues.

Phenacetine does not cause any disagreeable symptoms in healthy persons even in doses of 1—2 grm. (16—32 grains); in 20 cases (12 adults and 8 children) in which it was administered it proved to be a quickly and energetically acting antipyretic. Nausea, vomiting, cyanosis, collapse, or other disagreeable after effects never occur. Dr. Hoppe fully confirms Dr. Köbler's statement as to the gradual fall and very slow rise of fever temperatures. Both investigators agree that Phenacetine produces **Apyrexia** as surely as any other antipyretic.

FOR CHILDREN.—In eight cases reported upon by Dr. Hoppe, Phenacetine acted energetically as an antipyretic on children in doses of 0.2—0.4 grm. (3½—7 grains) without causing any disagreeable symptoms, and Dr. Sloyer in 1 case has recently given it to young children in doses of 0.5 grm. (8 grains); he obtained by its administration not only the desired antipyretic effect, but also a condition of evident comfort and quiet.

NEURALGIA.—Besides its antipyretic effects, it possesses eminently antineuralgic properties. Dr. Hoppe pushed 15 cases of severe cephalalgia and megrim, where Phenacetine produced an effect which was most beneficial and, at the same time, most astonishing. It should also be mentioned that Phenacetine was of special value in a case which had previously, but unsuccessfully, been treated by Antifebrin and Antipyrin. In such larger doses as 1—2 grm. (16—32 grains), given several times a day, Dr. Hoppe has found Phenacetine to be an excellent antineuralgic; it does not act quickly, but surely (generally in 1—2 hours), without causing any ill effects. On this point Dr. Heusser also says:—

"Phenacetine promises to become a most valuable addition to therapeutic agents, owing to its beneficial influence on the nervous system. It is not a narcotic like morphia, but acts, as Dr. Hoppe also observes, similarly to Antipyrin, and more comforting and pain-allaying. Its wonderful anodyne effect is shown in cases of neuralgia and other derangements of the nervous system arising from reflectant irritation or general nervousness. I have prescribed it almost daily in megrim, gastralgia, ischias, insomnia, &c., caused by diseases of the uterus, the kidneys, or by overwork, &c., and have frequently heard it highly and enthusiastically praised. In insomnia caused by over-work and nervous excitement I myself have taken doses of 1 grm. (16 grains) with the best result. Phenacetine, contrary to quinine, bromide of potassium, and other narcotics proper, does not cause lassitude or other disagreeable symptoms, and is easily taken on account of its tasteless nature. As it promises to become an important remedy in many hysterical, neuralgic, and other nervous disorders, I do not hesitate to predict for it in this respect a distinguished place among therapeutic agents."

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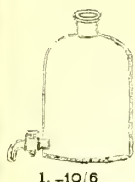
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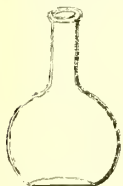
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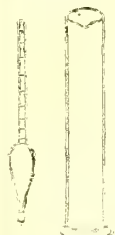
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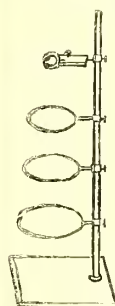
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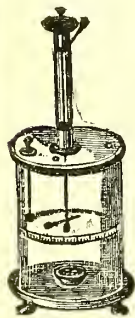
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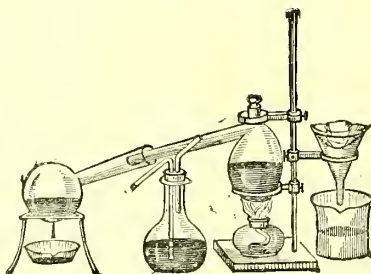
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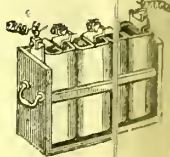
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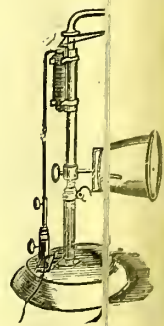
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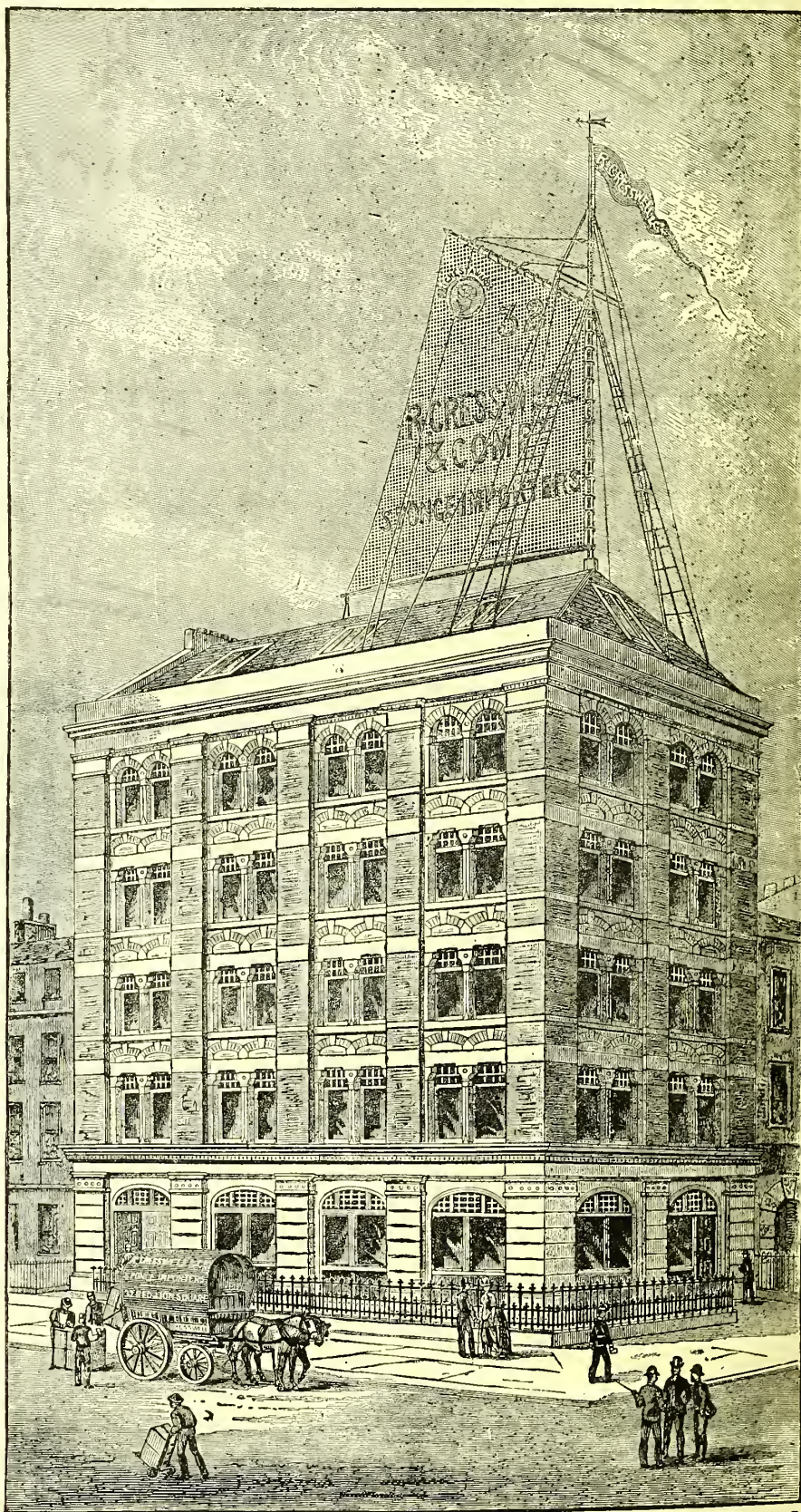
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5	1st	Superior do. large Bath sizes	25	0/
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7	2nd	Do. do. do.	73	4/
8	2nd	Good quality shapes, small	280	0/
9	2nd	Do. large Bath sizes	25	0/
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11	3rd	Do. do.	85	0/
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18	2nd	Do. do.	60	0/
19	2nd	Do. Bath sizes	35	0/
20	3rd	Fine Cups, assorted sizes	110	0/
21	3rd	Do. do.	65	5/
22	3rd	Do. Bath sizes	35	0/
23	1st	Turkey Solids, assorted sizes	100	0/
24	2nd	Do. do.	100	0/
25	1st	Flat Saddle, assorted sizes	50	0/
26	1st	Do. do.	30	0/
27	2nd	Do. do.	50	0/
28	2nd	Do. do.	30	0/

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37	2nd	Do. do.	210	5/

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No.			Pieces	Price
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55	Do.	...	150	"
56	Do.	...	200	"
57	Do.	...	400	"
58	Do.	...	50	"
59	Do.	do. do.	75	"
60	Do.	do. do.	190	"
61	Do.	do. do.	150	"
62	Do.	do. do.	209	"
63	Do.	do. do.	400	"
64	Do.	do. 2nd quality	100	"
65	Do.	do. do.	150	"
66	Do.	do. do.	250	"
67	Do.	do. do.	400	"

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FA	Finest Toilet and Bath	...	150	pieces
FB	Do. do.	...	100	"
FC	Do. do.	...	100	"
FD	Do. do.	...	100	"
FE	Do. do.	...	100	"

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No.			Per case.	No.			Per case.
7	Finest Wool (for stable use)	...	150 pieces	100/	10	Finest Velvet (for stable use)	150 pieces
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2	" " " " " "	18 "	18/	13	" " " " " "	18 "	18/
3	" " " " " "	18 "	24/	14	{ Good Bath Large Honey-Comb, 2nd quality ... }	12 "	27/
4	" " " " " "	18 "	30/	15	" " " " " "	12 "	36/
5	" " " " " "	12 "	27/	16	" " " " " "	12 "	48/
6	{ Best Bath Honey-Comb, 1st quality ... }	12 "	36/	17	{ Good General Large Honey-Comb, 3rd quality ... }	18 "	16/
7	" " " " " "	12 "	48/	18	" " " " " "	18 "	12/
8	" " " " " "	12 "	60/	19	" " " " " "	18 "	14/
9	{ Best Bath Large Honey-Comb, 1st quality ... }	6 "	36/	20	" " " " " "	12 "	18/
10	" " " " " "	6 "	48/	21	" " " " " "	12 "	24/
11	{ Good Toilet Honey-Comb, 2nd quality ... }	18 "	9/	22	" " " " " "	12 "	30/

FINE TURKEY SPONGES.

No.	Qty.		On each string.	Per string.	No.	Qty.		On each string.	Per string.
23	1st	{ Superior Fine Turkey Cups }	12	18/	37	1st	{ Sup. Small Fine Trky. Cups ... }	3 rnds., 25	18/
24	1st	" " ...	12	24/	38	1st	" " "	" 25	24/
25	1st	" " ...	12	36/	39	1st	" " "	" 25	30/
26	1st	" " ...	12	48/	40	2nd	{ Good Small Fine Turkey Cups ... }	" 25	15/
27	1st	" " ...	12	60/	41	2nd	" " "	" 25	20/
28	1st	" " ...	12	72/	42	2nd	" " "	" 25	25/
29	1st	" " ...	12	84/	43	Good	Fine Turkey Solids	25	9/
30	2nd	Good Fine Trky. Cups	12	15/	44	"	" " "	" ... 25	12/
31	2nd	" " ...	12	20/	45	"	" " "	" ... 25	18/
32	2nd	" " ...	12	30/	46	"	" " "	" ... 25	25/
33	2nd	" " ...	12	40/	47	"	" " "	" ... 25	33/
34	2nd	" " ...	12	50/	48	"	" " "	" ... 25	39/
35	2nd	" " ...	12	60/	49	"	" " "	" ... 25	48/
36	2nd	" " ...	12	72/					

FINE EGYPTIAN SPONGES.

No.		Per string.
50	Best Egyptian ... 20 pieces	6/
51	" " " " " " ... 20 "	9/
52	" " " " " " ... 20 "	14/
53	" " " " " " small 35	6/

FINE CUBAN SPONGES.

No.		Per string.
80	Fine Cuban ... 12 pieces	1/6
81	" " " " " " ... 12 "	3/
82	" " " " " " ... 12 "	6/
83	" " " " " " ... 12 "	9/

CUBAN SPONGES.

No.		Per string.	No.		Per string.
68	Cuban Brown ... 12 pieces	3/	74	Cuban Grass ... 12 pieces	3/
69	" " " " " " ... 12 "	6/	75	" " " " " " ... 12 "	6/
70	" " " " " " ... 12 "	9/	76	" " " " " " ... 12 "	9/
71	" Wool ... 12 "	9/	77	" " " " " " ... 12 "	18/
72	" " " " " " ... 12 "	12/	78	" " " " " " ... 12 "	24/
73	" " " " " " ... 12 "	15/	79	" " " " " " ... 12 "	30/

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No.		Pieces.	Per string.	No.		Pieces.	Per string.
A	Finest Wool, Bath sizes	12	30/	J	Finest Velvet, Bath sizes	12	25/
B	" " " " " "	12	24/	K	" " " " " "	12	20/
C	" " " " " "	12	20/	L	" " medium sizes	15	18/
D	" " medium sizes	15	22/	M	" " " " " "	15	16/
E	" " " " " "	15	15/	N	" " " " " "	15	12/
F	" " " " " "	15	10/	O	" " " " " "	15	9/
H	" " medium small	15	7/6	P	" " medium small	15	7/
I	" " " " " "	15	5/	Q	" " " " " "	15	4/6

CUT FLORIDA SPONGES.

No.		Per string.	No.		Per string.
1	Finest Wool ... 15 pieces	7/	4	Finest Velvet ... 15 pieces	6/
2	" " " " " " ... 15 "	10/	5	" " " " " " ... 15 "	9/
3	" " " " " " ... 15 "	15/	6	" " " " " " ... 15 "	12/

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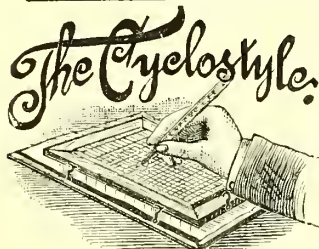
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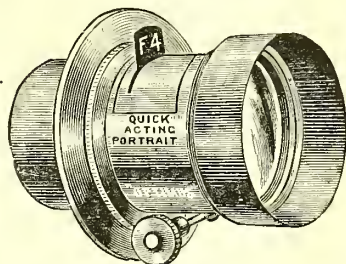
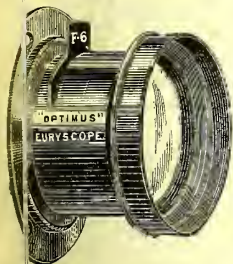
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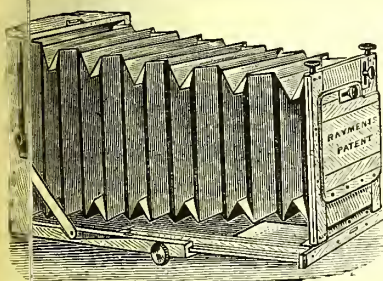
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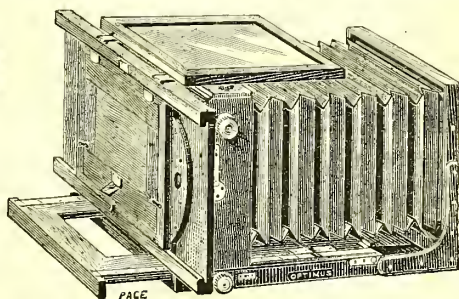
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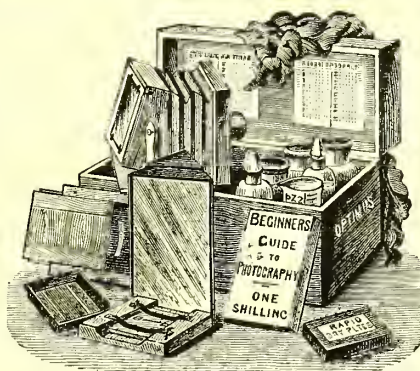
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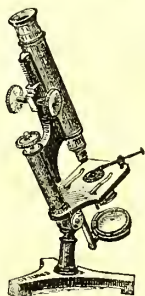
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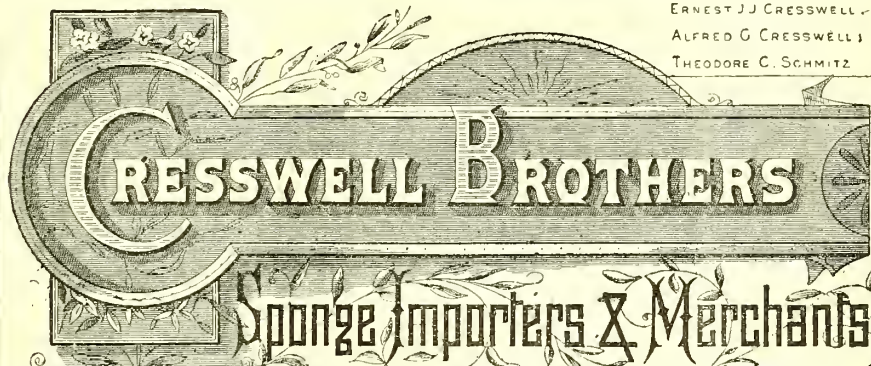
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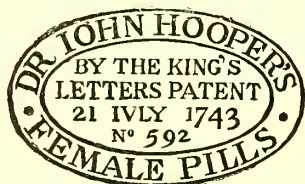
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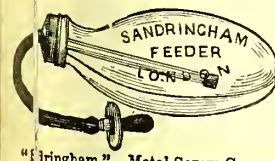
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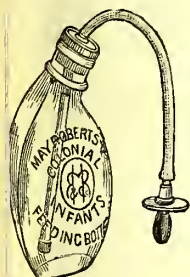
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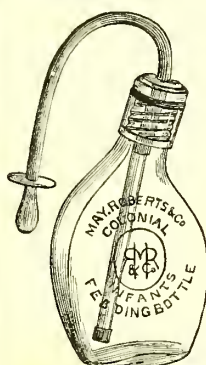
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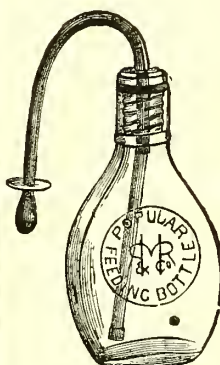
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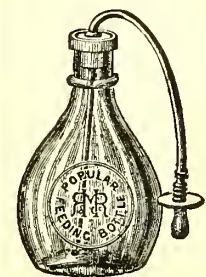
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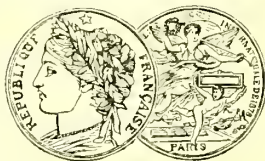
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HAY'S HOP ALE.

"This is an excellent Non-Alcoholic beverage."

The Lancet.

"Gives a delicious aroma of hops."—*Medical Press.*



GINGER CHAMPAGNE.

(Made from Hay's Essence.)

"An excellent and most agreeable beverage."

The Lancet.

"Mr. Hay has caught the fine aroma of ginger with remarkable success. It is equally sparkling but more refreshing than its rival, the Royal French Beverage."

The Chemist and Druggist.

GINGER ALE.

(Made from Hay's Fortified Essence.)

"It pours out with as fine a 'head' as any glass of ale, and possesses all the fine aromatic flavour of the pure ginger."

The Chemist and Druggist.

HAY'S SOLUBLE ESSENCE OF JAMAICA GINGER.

A Pure Essence of the Finest Ginger, perfectly free from Capsicum. Highly adapted for the manufacture of Transparent Aerated Waters, and for all Dietetic, Medicinal, and Pharmaceutical purposes. Trade Price, 5s. per lb.; 12 lbs. and upwards, 4s. 6d.

HAY'S COMPOUND FORTIFIED ESSENCE OF JAMAICA GINGER. FOR FIRST QUALITY GINGER ALE.

Specially prepared for the manufacture of the very Finest Ginger Ale made, is an addition of Vanilla, Lemon, and other flavours to the above. It imparts, with the exquisite Ginger Aroma of the above-mentioned Essence, a peculiarly fine fruity flavour, combined with the fullest amount of fragrance and pungency. Trade Price, 5s. 6d. per lb.; 12 lbs. and upwards, 5s. Quantity required, five fluid ozs. to each gallon of Syrup, making 106 10-oz. bottles.

HAY'S GINGER ALE EXTRACT. FOR SECOND QUALITY GINGER ALE.

This Extract is strongly recommended for the manufacture of Ginger Ale, to which it imparts Pungency, Colouring, great Brilliance, and an unusually Fine Ginger Flavour and Aroma, and makes a thoroughly good article. Trade Price, 4s. 6d. per lb.; 12 lbs. and upwards, 4s. Quantity required, three fluid ozs. to each gallon of Syrup, making 106 10-oz. Bottles.

HAY'S GINGER ALE ESSENCE. Highly Concentrated. FOR THIRD QUALITY GINGER ALE.

This Essence, which is a complete Bouquet of Flavours in a highly concentrated state, makes a Ginger Ale possessing an amount of aroma, flavour and quality that will be sure to command a large sale, and that is unsurpassed by the so-called finest Belfast Ginger Ale. Trade Price, 9s. per lb.; 12 lbs. and upwards, 8s. 6d. Quantity required, half a fluid oz. to each gallon of Syrup, making 106 10-oz. Bottles.

HAY'S GINGER CHAMPAGNE ESSENCE.

For the manufacture of Ginger Champagne. This Essence is a combination of the finest flavours, and imparts with the Ginger a most exquisite aroma, making a most delicious and refreshing approximation to Champagne. Trade Price, 8s. per lb.; 12 lbs. and upwards, 7s. 6d. Quantity required, ten fluid ozs. to each gallon of Syrup, making 106 10-oz. Bottles.

HAY'S SOLUBLE ESSENCE OF MESSINA LEMONS.

A magnificent Preparation, perfectly soluble, and makes the finest Lemonade obtainable. Trade Price, 8s. 6d. per lb.; 12 lbs. and upwards, 8s. "Added in the proportion of one fluid oz. to each gallon of Syrup, the Soluble Essence imparts the most delicious flavour of the lemon."—*The Chemists' Journal.*

HAY'S LEMON FLAVOUR. (Perfectly Soluble.)

Prepared from the Finest Messina Lemons, and imparts to Lemonade all the Fine Aroma and Flavour of the fresh fruit. An exceptionally Fine Essence. Trade Price, 5s. per lb.; 12 lbs. and upwards, 4s. 6d. Quantity required, one and a half fluid oz. to each gallon of Syrup, making 106 10-oz. Bottles.

HAY'S HOP ALE ESSENCE.

This Essence is made from the Choicest Hops grown, and is unrivalled for its peculiarly fine Hop flavour and aroma. Hop Ale made from this Essence has the full flavour of the finest Hops, and is a really appetising Bitter Beer. Trade price, 8s. 6d. per lb.; 12 lbs. and upwards, 8s. Quantity required, two fluid ozs. to each gallon of Syrup, making 106 10-oz. Bottles.

For Orange, Vanilla, and all other Essences send for Price List.

[2]

W. HAY, Manufacturing Chemist, Beverley Rd., HULL. ENGLAND.

The difference between preparations made from HAY'S ESSENCES and those made from the numerous SPURIOUS IMITATIONS of them bearing the name of SOLUBLE ESSENCES is most marked, and no manufacturer using the latter can compete with one using HAY'S PREPARATIONS, as is universally known.

Patrons, to prevent disappointment, should specify that the Goods are to be of HAY'S MANUFACTURE.

CELEBRATED D. FEVRES SELTZOGENES.

COMPLETE WITH FITTINGS.

GUARANTEED TESTED

by 175 lbs. of pressure per square inch.

BEST AND CHEAPEST.

CAUTION.

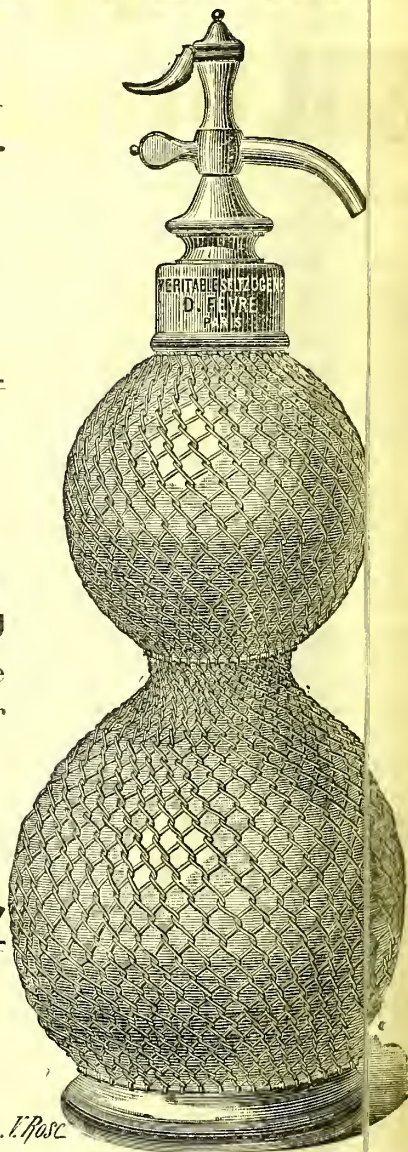
To ensure the purchase of the
genuine celebrated

SELTZOGENES OF D. FEVRE,

which do not cost more than the
imitations, observe on the shoulder
of the apparatus the words—

“VERITABLE SELTZOGENE D. FEVRE,”

AND THE TRADE MARK SIGNATURE—

THESSIER-FEVRE,

Sole Manufacturer,

OFFICE—

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398 Rue St. Honore, **PARIS.** 9 Rue Castex (Near the *Hotel de la Paix*).

THE NEW DIETETIC EFFERVESCING

KEF.

MILK DRINK.

KEF.

The most easily assimilated Food in Wasting Diseases.

PREPARED AND DELIVERED DAILY BY THE

SOLE MANUFACTURERS,

TRADE MARK: HEBE

SPRING & CO., 21 Blenheim Road, N.W.

TRADE MARK HEBE

IMPORTANT NOTICE!

The Next Issue of THE CHEMIST AND DRUGGIST set apart for the
insertion of PRICE LISTS and CIRCULARS, is that of JULY 28, 188

FOR TERMS APPLY EARLY TO

THE PUBLISHER, at the OFFICE, 42 CANNON STREET, E.C.

ESTABLISHMENT OF BOULEVARD VOLTAIRE, 162 & 164, PARIS.

OLD & SILVER
MEDALSAT ALL
EXHIBITIONS.

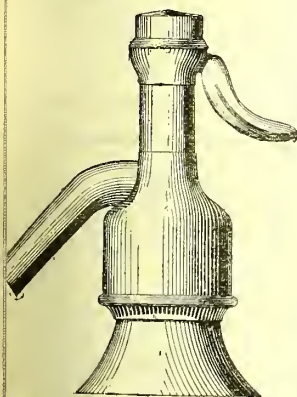
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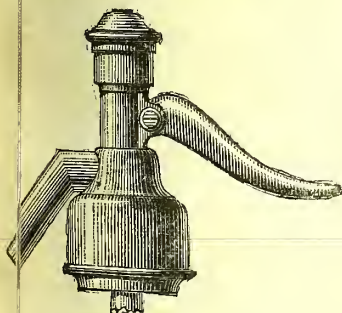
SYPHONS

OF ALL MODELS

Of Bright or Ordinary
Metal,
and of White or Coloured Glass,
1st Quality.



SMALL LEVER.—No. 5.



LARGE LEVER.—No. 10.



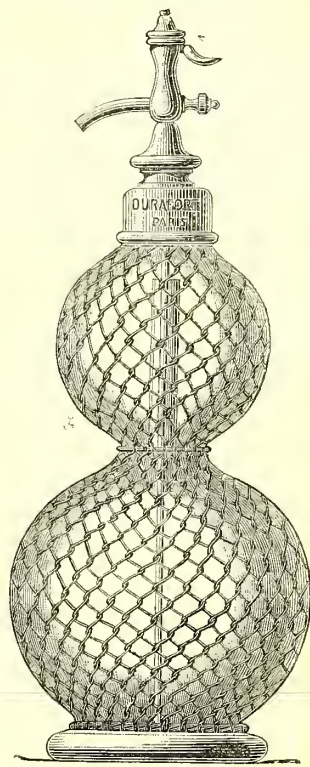
SMALL LEVER.—No. 1.

APPARATUS

AND

POWDERS

To Make Seltzer and Vichy
Waters, &c., &c.



SELTZATEUR.

Our Patent Syphons with TUBES entirely made of CRYSTAL for Lemonade and Potash or Soda Water.

We beg to call the attention of our numerous customers to the quality of the material employed in the manufacture of our Syphons. In the bright quality not a particle of lead is employed. The crystal is of the very best quality; each Syphon is guaranteed to be tested before leaving our works.

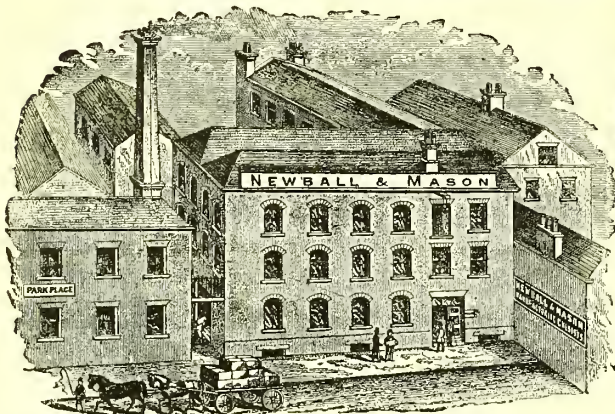
SODA WATER MACHINES.

FILLING MACHINES.

Our General Catalogue and List Price will be sent free on application. Large Discount for Quantities.

NON-INTOXICATING BEER

PRODUCED AT A SMALL COST AND LITTLE TROUBLE.
ONE TABLESPOONFUL MAKES A GALLON.



MASON'S ORIGINAL

EXTRACT OR ESSENCE OF HERBS

(REGISTERED).

Composed of Yarrow, Dandelion, Comfrey, & Horehound.

FOR THE SPEEDY PRODUCTION OF

HERB OR BOTANIC BEER.

This invaluable preparation is carefully compounded from the above well-known Herbs. Notwithstanding so many imitations got up to resemble the original, it stands unrivalled for the production of a most delicious, wholesome, and non-intoxicating beverage, full of body and flavour, and a rich creamy head like bottled ale.

INVENTORS AND MANUFACTURERS—

NEWBALL & MASON, Chemists,
Park Place, NOTTINGHAM.

WHOLESALE AGENTS.—LONDON—Sanger & Sons, Loh & Co., Barclay & Sons, Edwards & Sons, Newbery & Sons, Hovenden & Son, Sutton & Co. LIVERPOOL—Evans, Sons & Co.; Jno. Thompson. LEEDS—Goodall, Backhouse & Co.

COLONIAL AGENTS WANTED.

BEWARE OF MEAN & FRAUDULENT IMITATIONS.
BEWARE OF OTHERS COPYING our Handbills and Labels.
BEWARE OF CHEAP FOREIGN PRODUCE.

MASON'S IS A SPECIAL COMPOUND,
AND THE ORIGINAL PREPARATION.

ALL OTHERS ARE IMITATIONS.

Sold in Bottles, 6d., 1s., 2s., 5s., and 20s. each. Prices, Circulars, Show Cards, &c., on application.
Is not Affected by Climate or Weather.

"MONTSERRAT"

TRADE MARK.



N.B.

The "Montserrat Company's" Lime Fruit Juice and Cordia's are now in large and general demand everywhere, and are being extensively advertised. Every Trader should stock them. Their success has caused many IMITATIONS to spring up, many of them utterly worthless Concoctions. It is, therefore, of utmost importance to Traders, as well as to the Public, to see that the Trade Marks of the MONTSERRAT COMPANY (Limited), and the SOLE CONSIGNEES, are on the Capsule of each Bottle. The word "Montserrat" is also duly registered as a Trade Mark. Legal proceedings will be instituted against all persons infringing the Trade Marks as above named.
Show Cards, Handbills, and Leaflets supplied free of charge.

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Sole Consignees—EVANS, SONS & CO., LIVERPOOL.

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Also Agents in nearly Every Part of the World.

PRIZE MEDAL



HEALTH
EXHIBITION.

ESTABLISHED 1812.

POTTER & CLARKE,



Registered Trade Mark

WHOLESALE AND EXPORT BOTANIC DRUGGISTS,
75 WESTON STREET, LONDON, S.E.

SPECIALITIES—

POTTER'S HERB BEER EXTRACT

the production of a splendid Botanic Beer, with a good colour, flavour, and body, and a creamy head like bottled ale. The demand for this article last year was exceedingly large, and the demand this year bids fair to be still larger. All Chemists will find it a profitable article of sale.

Price 10d. per lb. Special quotations for quantity. In 6d. Bottles, 3/6 per dozen.
Supplies of printed matter sent with all 6d. Bottles. Will keep good in any climate.

**FLUID EXTRACTS. NEW REMEDIES.
MEDICINAL HERBS IN PACKETS.**

Special Agents for Messrs. Parke, Davis & Co.'s Fluid Extracts, Concentrations, Pressed Herbs, &c.

Price Lists on application. Telegraphic Address—"HOREHOUND, LONDON."

FOREIGN INDENTS RECEIVE OUR SPECIAL ATTENTION.

PLATNESS OF TASTE

SO COMMON IN FILTERED WATER,

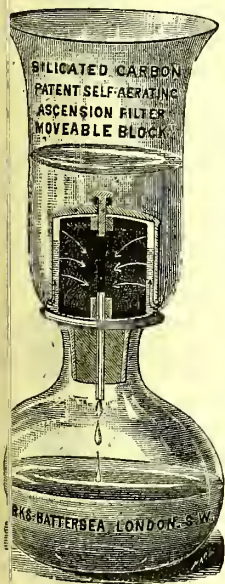
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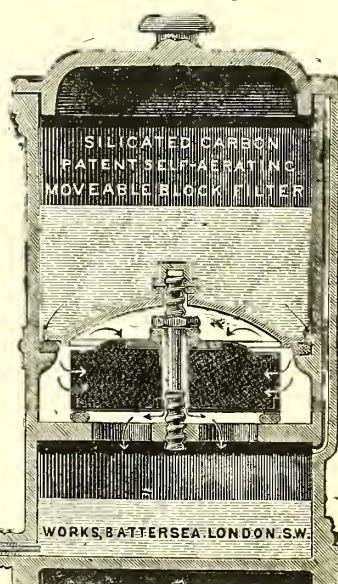
**SILICATED
CARBON
FILTERS
AERATED**

By means of which the water is Aerated and Filtered simultaneously, rendering it, even after boiling, Pure, Bright, and Palatable.

The Silica'd Carbon Block can be Instantly Removed, leaving the whole of the Filter Open for Inspection and Cleansing.



Glass Table Filters.



Domestic Filters.

LIBERAL DISCOUNT TO THE TRADE.

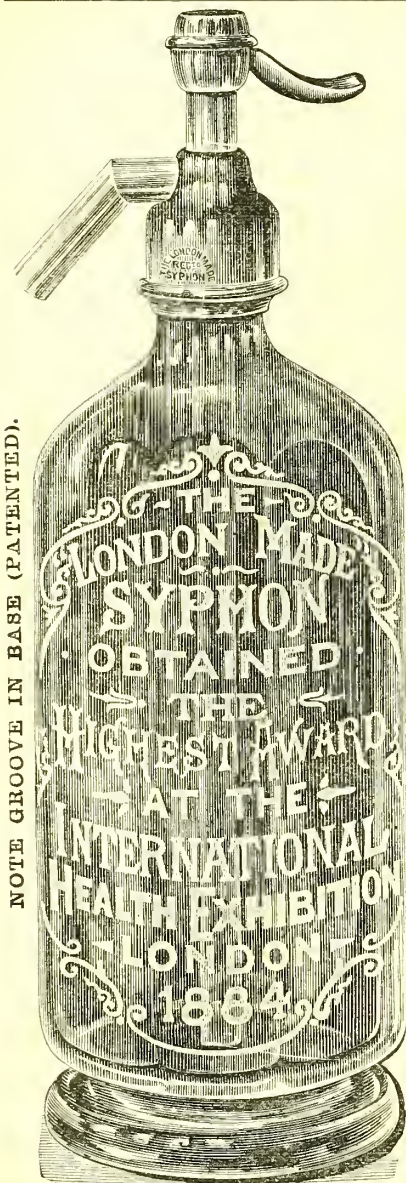
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FOR PRICES AND FULL PARTICULARS, WRITE TO THE
SILICATED CARBON FILTER CO., BATTERSEA, LONDON, S.W.

THE "LONDON-MADE" SYPHON BOTTLE

(TITLE REGISTERED).

Obtained the HIGHEST AWARD at the International Health Exhibition, London, 1884.



The high reputation this bottle has achieved is due to the fact of its being in every particular the most perfect yet introduced; and when compared with others in the market it stands pre-eminent. It is most simple in its working parts, therefore the least liable to get out of order; it is the most easily opened, the lightest pressure on the handle being sufficient; it produces a more highly-charged gaseous water than is usually obtained from siphons; it compares most favourably in appearance with any, and the metal top being entirely free from lead, the prejudice against siphon drinks is at once removed, as the liquid passes over pure tin only.

All our Syphons are now fitted at the base with a groove, so that drips from the spout after use are supplied at no extra charge, and will be found of great utility in preventing stains, &c., upon table linen. This is a desideratum long been wanting, particularly for private-house use. Send for sample; forwarded upon receipt of 2s.

NOTE.—Syphons made with our patent foot for collecting excess of liquid dripping from the spout after use are supplied at no extra charge, and will be found of great utility in preventing stains, &c., upon table linen. This is a desideratum long been wanting, particularly for private-house use. Send for sample; forwarded upon receipt of 2s.

Any name, crest, or trade-mark put on the glass by an improved acid process, at from 18s. to 24s. per gross. There is a three-fold advantage in this, as it forms a continual advertisement, is a great ornament, and a preventive of fraud. The plate for engraving costs extra from 5s. upwards, according to the artistic device required.

PRICES (WHITE, BLUE, GREEN, OR AMBER):—

	By the gross, per doz.	Less than 1 gross, per doz.
Quart size	£1 2 0	£1 4 0
Pint size	1 1 0	1 3 0
Half-pint, Pear shape	1 0 0	1 2 0
Octagonal vases, any colour (including Azure Blue)	1 4 0	1 6 0

Tops, nickel-plated, from 5s. 6d. per doz. extra. Tops, silver-plated and burnished, from 9s. per doz. extra. A charge is made for packing, except when ordered in our patent tin cases (holding one dozen each, price 2s. 6d. each).

Please Note.—B. & F. are the only firm manufacturing Syphons in England that do not supply them filled, and so compete with their customers' trade.

BARNETT & FOSTER,

MINERAL WATER ENGINEERS,

Manufacturing Chemists, and General Providers for the Aërated Water Wine, Beer, and Cyder Trades,

"Niagara Works," 26^T Eagle Wharf Road, London, N.

Send for Price List of Soda-water

Machinery and Accessories.

TEMPERANCE BEVERAGIS.

A Sixpenny Bottle of

ADAMS'S EXTRACT OF HERBS

Will make 8 gallons of sparkling, wholesome, and refining

PRIME HERB OR BOTANIC BEER.

Unequalled in strength and richness of flavour by any preparation made from fresh herbs.

The Extract is very carefully manufactured, on the most improved scientific principles, from the herbs and plants gathered and dried the proper season, when their virtues are in full vigour, thus retaining their invigorating and health-giving properties.

It makes an excellent beverage, giving natural flavour and cold, and a sparkling foam like bottled ale.

In Bottles, 6d. to make 8 gals.; 1s. to make 18 gals.; and 2s. 6d. to make 50 gals.

ADAMS'S GINGER ALE ESSENCE

makes a sparkling, refreshing, and invigorating beverage for summer and winter.

ADAMS'S SPARKLING FOAM PRODUCER.

One tablespoonful added to 2 gallons of the Herb Beer or Ginger Ale, just before bottling, gives a creamy foam like bottled ale.

Wholesale Agents,

W. EDWARDS & SONS, Queen Victoria St., London.

Specially favourable terms to large Buyers from the

PROPRIETOR,

B. ADAMS, Mansfield, Nots.

EVANS' SALINE. EFFERVESCING.

This preparation is a mixture, in definite proportions, of Howard's Chlorate of Potash, English Tartaric Acid, bicarbonate of Soda, and a little Cane Sugar. The proportion of these ingredients is fixed, and always remains the same. This, and the pleasant excess of acid, characterise Evans' Saline. A dry, mobile powder, dissolving perfectly.

Bottles with Chemists' Own Name, or in Bulk.

New artistic designs for wrappers for the season

For further particulars as to price, &c., see Price List.

EVANS' OL. RICINI SINE SAPORE (TASTELESS).

This Castor Oil is expressly and solely manufactured for us. It is produced by a process which removes the taste, though not the efficacious properties.

In W. Quarts, Tins, or Bottles with special Label

EVANS, SONS & CO., EVANS, LESCHER & WEBB,
56 Hanover Street, 60 Bartholomew Close
LIVERPOOL. LONDON.

CANADA:

EVANS, SONS & MASON (Lim.), Montreal & Toronto.

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JAMIESON & CO., George Street, Sydney, N.S.W.

TYRER'S SAUCES

AND

"BOROUGH" KETCHUP.

DO NOT THROW MONEY AWAY
BUT WRITE
FOR A
FREE SAMPLE OF
SENT FREE
TO ANY ADDRESS

Tyrer's
"BOROUGH"
Ketchup

SILVER MEDAL
LONDON.




"BOROUGH" KETCHUP, WORCESTER, HARVEY, YORKSHIRE, OR READING SAUCE.

1d. Sample Bottles, dozen parcels	...	per gross	5/	extra quality	6/
1d. "Giant" Bottles, dozen parcels...	...	"	5/6	"	6/6
1d. "Giant" Bottles, dozen parcels...	...	"	6/	"	8/
1d. "Giant" Bottles, dozen parcels...	...	"	6/6	"	8/6
1d. Bottles (flat or round), reputed 1/2-pint	...	"	16/	"	24/
1d. Bottles (flat or round), reputed pint	...	"	26/	"	32/
1d. pint Imperial Round Stoppered Bottles	...	"	30/	"	36/
1-pint	...	"	50/	"	60/
12 1/2-gallon "Casks (casks free)"	...	each	20/	"	32/

ESSENCE OF ANCHOVIES.

1d. Bottles, reputed 1/2-pint, per gross	30/	extra quality	48/	1-gallon Bottles (bottles free) ...	4/ and 6/6 each
1d. Bottles, reputed pint	54/	"	90/	12 1/2-gallon Casks (cask free) ...	40/ .. 70/ ..

ROYAL CAFÉ SAUCE.

In 8-oz. Square Stoppered Bottles, 48/ per gross.
rich, fruity Sauce of fine flavour, and worth especial attention, as being the most
Saleable in the Market.

SAMPLES OF ANY KIND SENT FREE OF ALL COST BY

PETER TYRER,

The "Borough" Ketchup and Sauce Maker, 70 Long Lane, BOROUGH, LONDON, S.E.

SCOTCH AGENCY:—113 WEST NILE STREET, GLASGOW.

Also sold by W. & C. PANTIN, Upper Thames Street, LONDON, E.C.; BURGONYE & CO., 16 Coleman Street, LONDON, E.C.

JOS. TRAVERS & SONS, 119 Cannon Street, LONDON, E.C.



LAZENBY'S HARVEY'S SAUCE

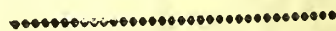
FOR
FISH, GAME, STEAKS
&c.

In use for now nearly
a century.

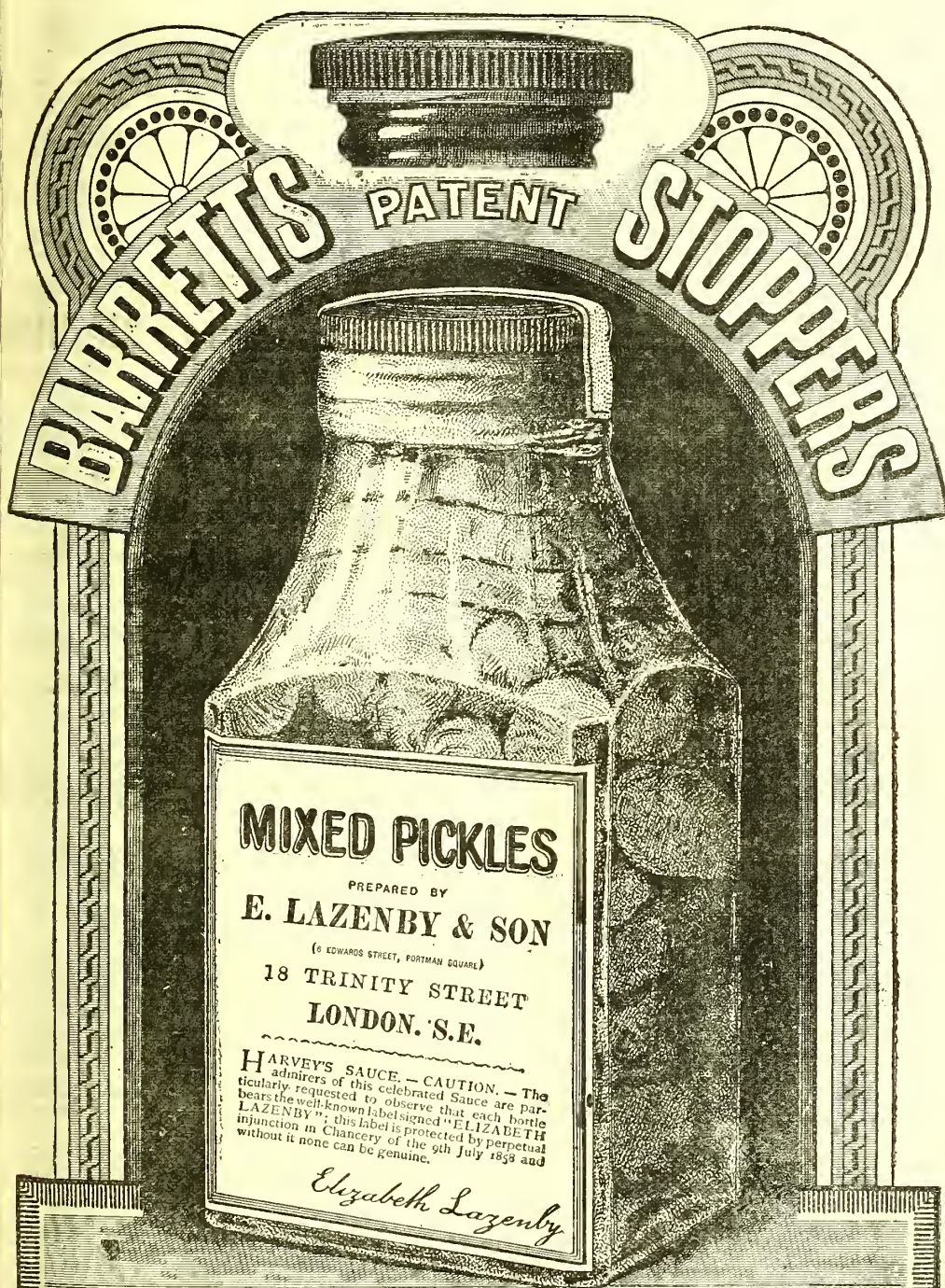


CAUTION.

Each bottle of the celebrated Sauce prepared from the ORIGINAL RECIPE bears the well-known Label signed "Elizabeth Lazenby," without which none can be genuine.



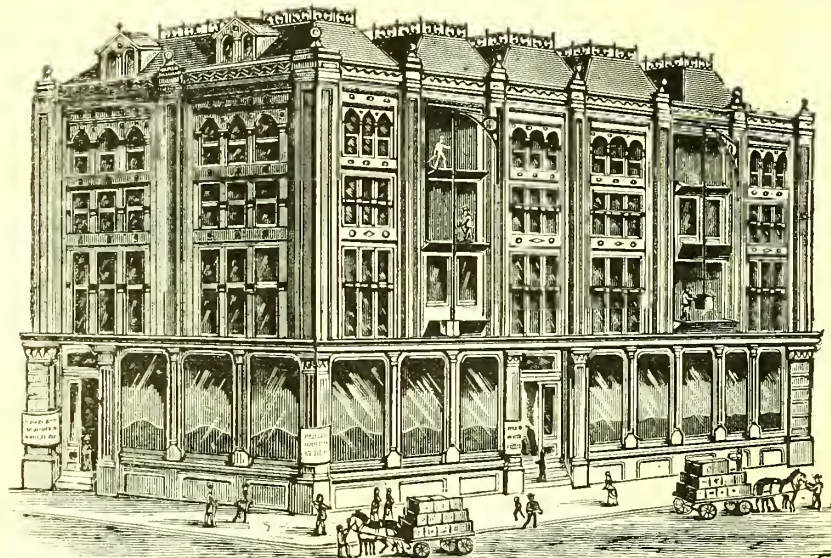
E. LAZENBY & SON,
18 Trinity Street,
LONDON. S.E.



AGENTS FOR THE UNITED KINGDOM
E. LAZENBY & SON, LONDON.

HESELTINE'S

THE PREMIER TEA OF INDIA AND CEYLON



OFFICES AND DUTY-PAID WAREHOUSES.

IS THEIR SPECIAL
IMPORTATION
AND THE PERFECTION
OF TEA.

“TAPRABUNDA”

REGISTERED TRADE MARK

FOR RETAIL AT

1s. 8d., 2s., and 2s. 6d.

In Lead Packets, $\frac{1}{4}$ -lb., $\frac{1}{2}$ -lb. & 1-lb.Terms of Agency, and Samples of
the Tea, on application.

WM. HESELTINE & SON,

56 Wilson Street, and 1 & 3 Earl Street, Finsbury, LONDON, E.C.

AGENTS WANTED WHERE NOT ALREADY REPRESENTED

PEARSE & WHEATLEY, 42 MINCING LANE, LONDON

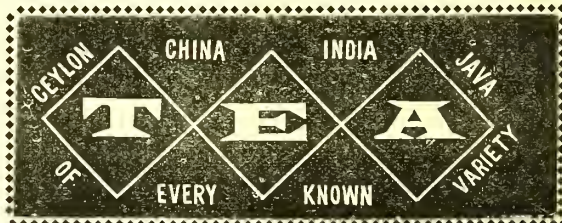
(Telegraphic Address—PACIFICUS LONDON.)

WHOLESALE DEALERS & EXPORTERS OF TEA, COFFEE, ETC.

SUPPLY AT LOWEST MARKET RATES EITHER FOR HOME CONSUMPTION OR EXPORT.

In original Boxes, Half
Chests, or Chests, as im-
ported.

Duty Paid or under Bond.

Prices and Samples on
application.Or in Leaden or Foil packets
($\frac{1}{4}$ -lb., $\frac{1}{2}$ -lb., 1-lb., &c.),Or in kilos., $\frac{1}{2}$ kilos., or fractional
parts, for countries using these
weights.Fancy Tin Boxes of size
or weight.

SPECIAL BLENDS OF TEA (Duty-paid prices quoted).

No. A.	No. T.	No. 1.	No. 2.	No. 2a.	No. 3.	No. 3a.	No. 4.	No. 4a.	No. 5.	No. 5a.	No. 6.	X.
10d.	11d.	1/	1/2	1/3	1/4	1/5	1/6	1/7 $\frac{1}{2}$	1/9	1/10 $\frac{1}{2}$	2/	2/4

In Boxes, 20 lbs. or 40 lbs.; $\frac{1}{4}$ -Chests, 60 lbs.; or Chests, 100 lbs. 60 lbs. carriage paid to any Station in England or Wales. Terms—Net Cash on order.

CEYLON TEAS (PURE)—
IN LEAD PACKAGES ($\frac{1}{4}$ -lb., $\frac{1}{2}$ -lb., or 1-lb.)
Most attractively labelled.

Culloden	Grange	Sheen	Crwell	Mooloya	Pen-y-lan	St. Ley's
1/4	1/6	1/8	1/10	2/2	2/6	2/9

Export Department.—Teas or Coffees in Bond. Shipped to any part of the world. Terms, f.o.b. London; against banker's credit or acceptance. Samples, Price Current, and every information on application.

RAW COFFEES (Duty 14s. cwt.).
Rio, Santos, Costa Rica, Mocha, East
India, Mysore, Naidoobatum, Jamaica,
Porto Rico, Ceylon, Guatemala, Manila,
Java, &c.



AT MARKET PRICES.

ROASTED COFFEES (Duty Paid).
10 $\frac{1}{2}$ d., 1/1, 1/2, 1/3, 1/4; Mocha 1/5.
In Bags, 28 lbs., 56 lbs., or 112 lbs. net. Bags free.
Also supplied Ground in 7, 14-lb.,
28-lb., or 56-lb. tins.

THE NEW FRENCH COFFEE—CAFE FRANCAIS to sell at 10d., 1/1, 1/4, and 1/6, in $\frac{1}{4}$ -lb., $\frac{1}{2}$ -lb., and 1-lb. tins. Most tastefully labelled, without any firm's name appearing.

MITRE TEA.

COMFORT & PROLONG YOUR EXISTENCE

BY DRINKING

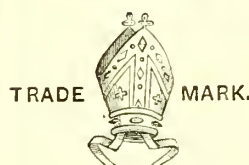
**MITRE
TEA.**



Mitre "Broken Leaf"	s. d. 1 4
Mitre "Broken Am. Pekoe" ...	1 8
Mitre "Thrift" (whole leaf)	1 8
Mitre "Kee-Mun" ...	2 0
Mitre "Amgoorie" ...	2 6



**MITRE
TEA.**



Mitre "Broken Leaf"	s. d. 1 4
Mitre "Broken Am. Pekoe" ...	1 8
Mitre "Thrift" (whole leaf)	1 8
Mitre "Kee-Mun" ...	2 0
Mitre "Amgoorie" ...	2 6

Fac-Simile of Show Card distributed Gratis to all Agents.

Sold by Specially Selected Agents. Wrapped in $\frac{1}{4}$ -lb., $\frac{1}{2}$ -lb., & 1-lb. Parcels.

VALUABLE AGENCY.

Free Show Cards, Enamelled Iron Tablets, Posters, Window Transfer, and Handbills with Agent's Name supplied free. Newspaper and Railway Station Advertisements to suit the requirements of Agents. Applications for Agencies where unrepresented will receive prompt attention. Price Current and Pamphlet, with Terms, post free.

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BIRMINGHAM VINEGAR BREWERY COMPANY, Limited, the
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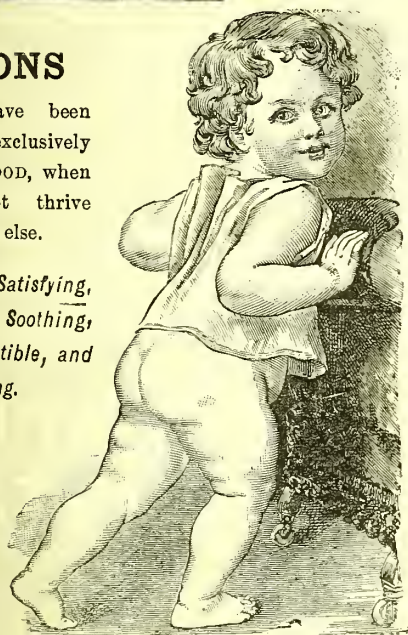
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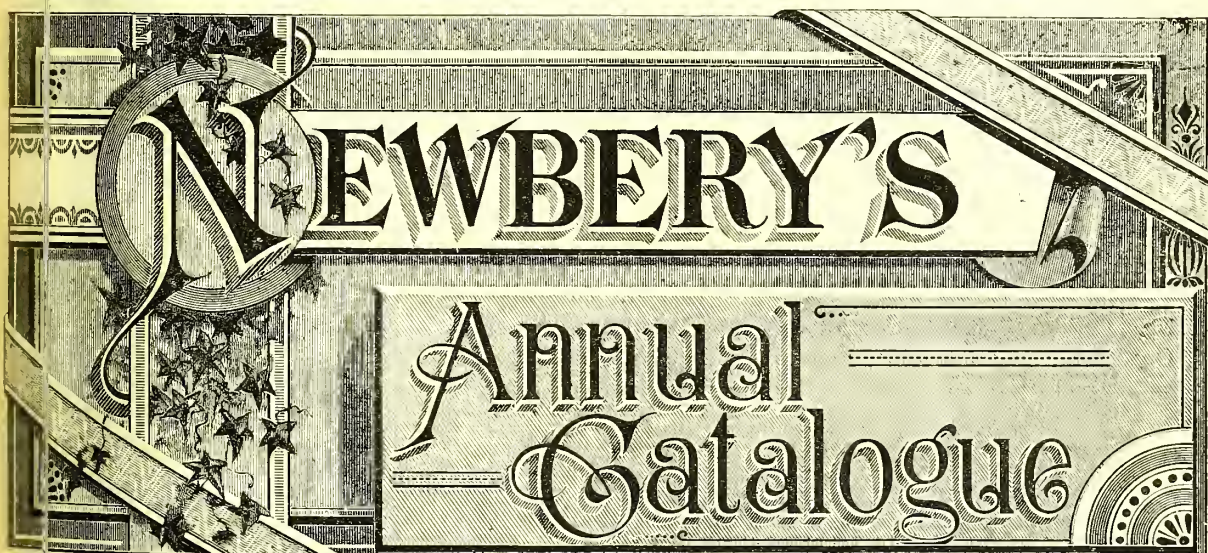
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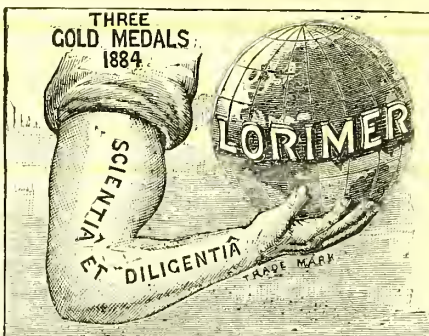
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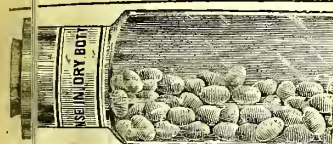
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Aloin	"	1-10 gr.	5/	16/	
"	"	1 gr.	6/	20/	
"	"	1 gr.	7/	24/	
"	"	1 gr.	11/	39/6	
"	Compound	7/	24/		
"	Strychnine	7/	24/		
"	Strychnine and	7/	24/		
"	Belladonna	(See Cut)	7/	24/	
Arsen	Acid	1-50 gr.	5/	16/	
"	"	1-20 gr.	5/	16/	
Atrop	"	1-300 gr.	7/	24/	
"	"	1-100 gr.	7/	24/	
Calcin	Alphide	1-10 gr.	6/	20/	
"	"	1 gr.	6/	20/	
"	"	1 gr.	6/	20/	
"	"	1 gr.	6/	20/	
Cann	Indica Extract	1 gr.	7/	24/	
"	"	1 gr.	9/	32/	
Corro	Sublimate	1-30 gr.	5/	16/	
"	"	1-20 gr.	5/	16/	
"	"	1-10 gr.	5/	16/	
Digit	"	1-60 gr.	7/	24/	
<p>In this form the ingredients are not only perfectly preserved, but do not affect the teeth, or offend the palate, and, further, can be conveniently kept out of sight by those who object to be regarded as invalids.</p>					
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"It has also been frequently pointed out in this country that commercial cocaine hydrochlorate is not always of the high degree of purity which such an important remedial agent should be. We pointed out (THE CHEMIST AND DRUGGIST, vol. xxx. page 297) that a most useful test whereby anyone may prove the purity of the salt is that which was devised by Mr. Henry MacLagan," of McKesson & Robbins' Laboratory. "That test, according to its deviser, consists in adding one or two drops of solution of ammonia to a solution of 1 grain of cocaine hydrochlorate in about 2 oz. of water. If the hydrochlorate is pure, that is, free from amorphous alkaloid, there is, on stirring, an immediate precipitate, which in a few seconds separates into flocks of crystals, and these subside leaving the supernatant solution clear. We showed that it is better to use 1 oz. of water to 1 grain of cocaine, and that a sample of crude cocaine gave no precipitate whatever. The test is now recognised as a most delicate one, and is generally adopted."—*The Chemist and Druggist*, December 24, 1887.

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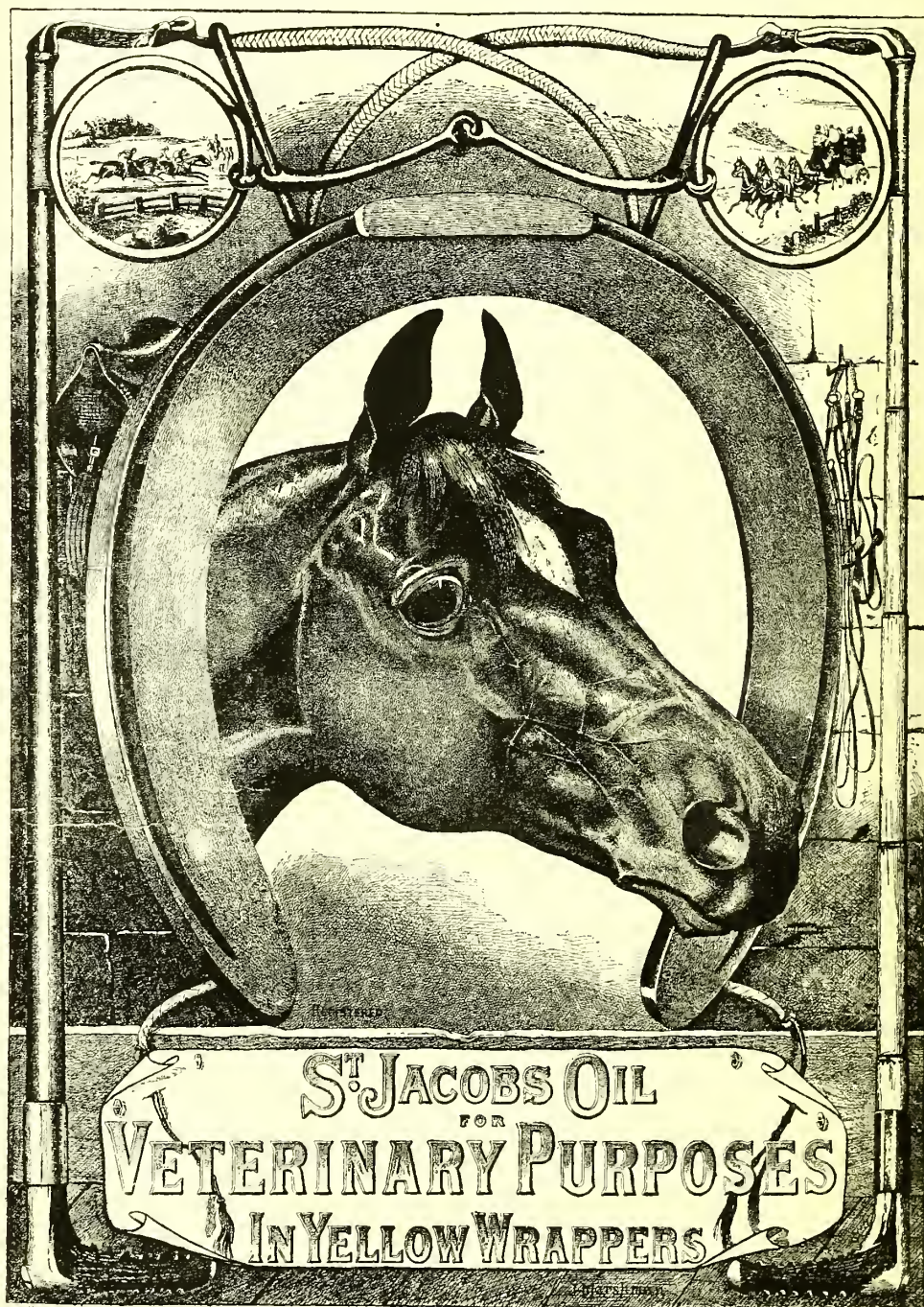
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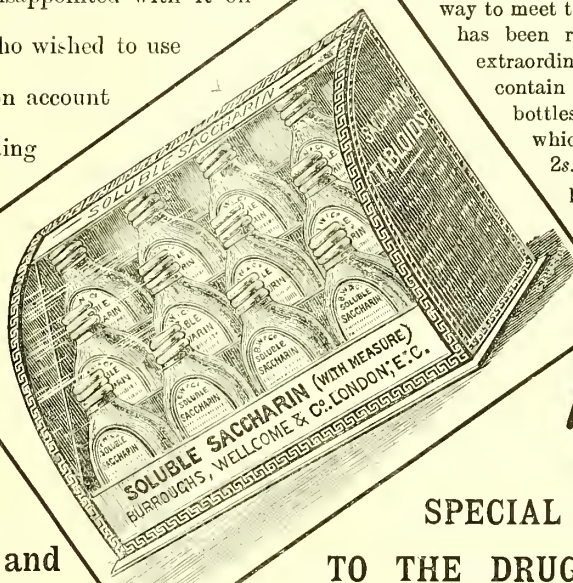
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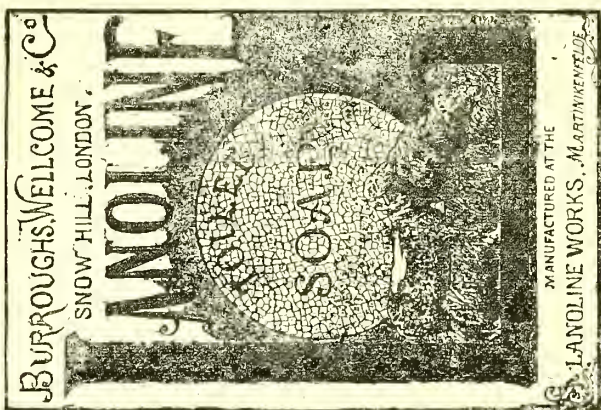
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POST-CARD COMPETITIONS, 1888.—No. 5.

As already announced, the competition for May is a test of the popularity of the various classes of goods sold by chemists.

Competitors are asked to send us post-cards during the month of May, on which they will state their selection to fill in the subjoined list:—

1. Most Popular Perfume.
2. " " Toilet Preparation.
3. " " Patent Medicine for internal use.
4. " " " " for external use.
5. " " B.P. Preparation (with doctors).
6. " " " " (with the public).
7. " " Domestic Remedy.
8. " " New Remedy.

Post-cards need not repeat the words we have printed above the number will suffice.

We shall count up the votes for the various articles quoted, and shall award the prize to the competitor who most nearly approaches the general decision.

Post-cards must be received before the end of May. Only subscribers and their employes are eligible to compete.

[We have been asked several questions in reference to this competition—whether, for example, under Nos. 7 and 8 proprietary articles are included. We do not desire to limit the judgment of competitors in any way, nor do we propose now to lay down any new rules. If the problem set is at all vague it is equally vague for all, and will not affect the final decision.]

Advertisements of employers and assistants can be received by us up to the first post on Friday mornings, and will be inserted in the current week's issue.

PARLIAMENTARY NEWS.

THE MEDICINE STAMP DUTY.

Dr. Farquharson asked the Chancellor of the Exchequer in the House of Commons on Monday whether, in view of the widespread dissatisfaction existing at the manner in which the medicine stamps tax had lately been enforced, especially in Scotland, he would be prepared, pending the introduction of a Bill dealing with the whole question, to repeal the clauses which apply to medicines not coming under the head of patent or secret compounds.

The Chancellor of the Exchequer: I am not aware that there has been any expression on the part of the chemists and druggists of the "widespread dissatisfaction" which the hon. member's question assumes to exist. In fact, the leading trade journals have on more than one occasion expressed an opinion that these duties are administered in a considerate manner. There is no difference between England and Scotland in the mode of enforcement. The adoption of the hon. member's suggestion would destroy the greater part of the produce of the duties.

THE PHARMACY ACT AMENDMENT BILL.

THIS Bill now goes over Whitsuntide, and our gallery correspondent considers that its prospects of passing into law this session are infinitesimal. The petition presented by Sir Henry Roscoe from the Royal College of Physicians of Edinburgh is as follows:—"That your petitioners have considered a Bill, intituled 'An Act to amend the Pharmacy Act, 1852, the Pharmacy Act 1868, and the Pharmacy Act (1868) Amendment Act 1869,' now before your honourable House. That your petitioners regard the provisions of the said Bill as calculated to ensure that persons retailing, dispensing, and compounding poisons shall possess a competent and practical knowledge of their business, and so conduce to the safety of the public at large. Your petitioners therefore humbly pray that the said Bill may be passed."

THE PHARMACY ACTS (IRELAND) AMENDMENT BILL.

This Bill was, on the motion of the Earl of Milltown, read a first time in the House of Lords on Monday last, and was ordered to be printed.

The Chemist and Druggist of Australasia.

CONTENTS OF No. 4, VOL. 3. APRIL 1, 1888.

Editorial Articles:—"The Additions to the Poisons Schedule in N.S.W.," "Sale of Poisons Exemption Clauses," "Association for the Advancement of Science," "The Dental Board of Victoria," "The Pharmaceutical Register of New Zealand."

Special Supplement, containing tabulated "poisons schedules" now in force in all the Australasian colonies.

COLONIAL REPORTS.

New South Wales.—Pharmacy Board Official Report—The New Poisons Schedule—Poison Prosecution Cases.

New Zealand.—Pharmacy Board of New Zealand and the Midland Pharmaceutical Association Official Reports.

Queensland.—Pharmaceutical Society: Report of Council Meeting.

South Australia.—Pharmaceutical Society: Official Report. Victoria.—Pharmaceutical Society of Australasia: Report of Annual Meeting—Dental Board of Victoria.

Letters from special correspondents in Sydney, Auckland, Adelaide, Hobart, and Launceston.

Correspondence on "The Articles exempted from the Sale of Poisons Act, Victoria," "Patent Medicines and the Victorian Tariff," "The Term 'Hazeline,'" "Manufacture of Iodine from Kelp, &c.," "Competition among Chemists," "Intercolonial Pharmaceutical Reciprocity."

Poisoning Cases—Laboratory Notes—Literary Notes, &c.

(Copies may be obtained at the London Office, 42 Cannon Street, E.C., 6d. each, or the journal will be supplied to subscribers outside Australasia at 5s. per annum.)

CORNER FOR STUDENTS.

CONDUCTED BY RICHARD J. MOSS, F.C.S.

QUALITATIVE ANALYSIS.

THE subject of the next exercise in qualitative analysis will be a mixture of *two* salts. It is to be examined for all the ordinary metallic and acid radicles, and each student will be required, not only to detect the constituents of the mixture, but to demonstrate the absence of all other substances. In reporting the results of the analysis students are to give a brief account of the work done, with a summary of the results obtained, distinguishing as far as possible any accidental impurities detected from the chief constituents of the mixture.

Students' applications for portions of the mixture should be sent in before Saturday, May 26; the samples will be forwarded to applicants a few days later.

Students' reports will be received up to June 16.

REPORTS.

The mixture of salts, which formed the subject of the last exercise, consisted of equal parts of borax and magnesium carbonate. The calculated composition of 100 parts of such a mixture is:—

Mg	..	..	..	..	..	14.28
Na	..	..	..	..	..	6.02
B ₂ O ₃	..	..	..	..	..	20.42
CO ₂	..	..	..	..	..	35.72
H ₂ O	..	..	..	..	..	23.56
						<u>100.00</u>

Supposing each constituent of this mixture to be capable of detection with equal facility, sodium, on account of its relatively small quantity, would be most likely to be overlooked, and next to it magnesium, while the pyro-boric radicle would, it might be supposed, run very little risk of escaping detection, as it constituted just one-fifth of the mixture. The actual results of the series of analyses are, however, very different. The total number of reports sent in by students this time was thirty-nine, and they exhibit a considerable variety of results. Eight were substantially correct. In two potassium was reported present as well as sodium, and one student found potassium and sodium as borate and carbonate, omitting magnesium. Eight students found magnesium and sodium as carbonates, omitting boracic acid. Six found the same two metals as carbonate and chloride. In eight cases magnesium and sodium were reported present as carbonate and bromide, carbonate and oxalate, carbonate and citrate, carbonate and acetate, carbonate and sulphite, carbonate and nitrate, carbonate and hydrate, chloride and sulphate. In the six remaining reports the results were announced as follows:—Magnesium carbonate alone, potassium and magnesium as carbonate and oxide, magnesium and possibly ammonium as carbonate, aluminium and sodium as sulphate and chloride, zinc potassium and sodium as carbonate and chloride, cadmium and sodium as carbonate and chloride. These results are interesting as showing the probable error in the analysis of such a mixture. Boracic acid was detected in only eleven cases, while magnesium was detected in every case except four, and sodium in every case except three. The inference to be drawn from these results is that our correspondents were much less capable of dealing with boracic acid than

any other constituent of the mixture, and therefore the reactions of this acid should be studied with special care.

There are two reactions which may be relied upon for the detection of boracic acid—the reaction with turmeric paper and that depending upon the colouration imparted to the alcohol flame. In the turmeric-paper test the precaution to observe is not to confound the colour with that produced by strong hydrochloric acid or ferric chloride. It is so easy to try, by way of comparison, a corresponding test with a known borate that there ought to be very little chance of mistake. In applying the alcohol-flame test it should be remembered that boracic acid must be present in the free state or it will not dissolve in the alcohol, and if it does not dissolve the flame will not be coloured. Nearly all borates are insoluble in alcohol, so sulphuric acid should be added in sufficient quantity to ensure the decomposition of the borate and the liberation of boracic acid in the free state. Chlorides are liable to give a colour which might be mistaken for the boracic-acid colouration, and copper salts should certainly be absent.

PRIZES.

The First Prize for the best analysis has been awarded to THOMAS WILLIAM GRANGER, 37 St. Matthias Road, Nottingham.

The Second Prize has been awarded to J. THOMAS, 93 Yorkshire Street, Rochdale.

Marks Awarded for Analyses.

T. W. Granger	..	..	100	G. R. Jesson	..	..	64
J. Thomas	..	..	95	Thymol	..	..	64
Iridium	..	..	93	H. Bowden	..	..	64
E. Turton	..	..	93	A. Barlow	..	..	64
Strophanthus	..	..	90	Hirudo	..	..	54
W. Hurd	..	..	88	Calcium	..	..	54
R. C. C. Harrison	..	..	85	Electrician	..	..	54
Hg	..	..	85	W. Saunders	..	..	54
W. A. G.	..	..	80	Peto	..	..	54
C. W. G. Halls	..	..	80	Euonymus	..	..	46
Dormar	..	..	80	Dubito	..	..	44
Perseverer	..	..	75	A. L. N. M.	..	..	44
S. C.	..	..	75	Federal	..	..	34
Carbo Ligni	..	..	75	W. G. Longbottom	..	..	34
Ajax	..	..	73	Coleraine	..	..	24
A. G. Mixon	..	..	73	H. C. B.	..	..	24
W. H. Wilcox	..	..	70	W. H. Hoare	..	..	24
T. G. Williamson	..	..	70	T. Peers	..	..	16
R. Smith	..	..	65	Eucalyptus	..	..	14
Aniseed	..	..	60				

TO CORRESPONDENTS.

Prizes.—The students to whom prizes are awarded are requested to write at once to the Publisher, naming the book they select, and stating how they wish it forwarded.

Any scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.

Any scientific book which is sold for about five shillings may be taken as a second prize.

* * All communications should include the names and addresses of the writers.

T. W. GRANGER.—Your analysis was very well carried out and your report was most creditable.

PERSEVERER.—Your examination for acids did not include a test which would detect boracic acid.

S. C.—From the particulars you give it is impossible to say what that you examined for acids; whether it was the original mixture or a specially prepared solution.

A. G. MIXON.—Your examination for the acids was not satisfactory. You seem to have confined your attention to carbonic acid, for the necessity of proving the absence of all the other acids. The action of the aqueous solution did not point solely to the presence of borate or hydrate; the aqueous solution of borax is feebly alkaline.

ANISEED.—The silver nitrate precipitate which you attributed was soluble in nitric acid, all but a minute trace, as well as being soluble in ammonia. It ought to be almost impossible to mistake take about hydrochloric acid.

THYMOL.—See remarks to "Aniseed."

H.—The solution to which you added barium chloride for the detection of acids can scarcely have been neutral or alkaline. If it contained barium chloride, the effect would be the same as if an excess of acid were present, as barium borate is freely soluble in a solution of ammonium chloride.

C.—The presence of boracic acid explains the reactions with silver nitrate which puzzled you. The failure to dissolve the supposed bromine in chloroform is explained by a very simple fact—the absence of bromine. It would have been a simple matter to try whether your reagents were right, by operating on a solution known to contain bromine.

E.—Your analysis was very incomplete, especially as regards the acids. You ought to have proved the absence of all the acids except carbonic and boracic.

W.—The method which you followed is not adapted for the examination of a mixture of salts, as it is designed only for the detection of one metal and one acid radicle.

P.—You ought to repeat your examination for acids in the presence of a sulphite, and note the difference from the results obtained with the ordinary sulphite.

E.—The absence of any odour of acetic acid when the mixture was treated with strong sulphuric acid was not consistent with the conclusion you came to, that acetic acid was present.

D.—The behaviour of the dry mixture, when heated in a test-tube, was quite like that of an oxalate.

A.—A very small quantity of a citrate would have revealed its presence by the peculiar burnt-sugar odour evolved on heating the dry mixture in a tube.

H.—A much more exhaustive examination is necessary in order to arrive at results of any value. The precipitate which you attributed to sulphuric acid was entirely soluble in hydrochloric acid.

H.—To obtain the precipitate which you thought due to alumina, it was necessary to have a strong solution, and little, if any, ammonium chloride; the precipitate readily dissolved in an excess of the latter reagent.

Metropolitan Reports.

S. LAW, SON & THOMPSON'S SWIMMING CLUB.—The final heat of the first competition for the Travellers' Prize was swum at the Islington Baths, Liverpool Road, on Monday evening, May 14. There was a splendid race between H. Linn (11 secs. start), E. G. Whitehouse (10 secs. start), and J. Hasthorpe (8 secs. start), which ended in victory for Little Hasthorpe, who struggled hard, lost by half a foot only. Whitehouse held his ground for three lengths and then retired.

APPOINTMENT OF ANALYST FOR BATTERSEA.—At last week's meeting of the Battersea vestry the Sanitary Committee reported that they had had under consideration the subject of the appointment of an analyst to the vestry. The following public analysts had, upon the invitation of the committee, submitted the terms upon which they would be prepared to act in that capacity:—Dr. A. J. Bernays, Dr. C. Cassal, Dr. A. Dupré, Dr. J. Muter, and Dr. J. A. Wainman, and the committee having carefully considered the same commended that Dr. C. E. Cassal be appointed public analyst to the vestry, at a salary of 100*l.* per annum, and that he be required to analyse and report upon all articles which might be submitted to him for analysis. Mr. Willis asked how happened that Dr. Cassal was selected. Dr. Bernays was the head of his profession, and why was he not selected? Mr. Muncy: The matter was left in the hands of the electors. (Hear, hear.) They reported that each of the gentlemen was as well known as the other, and the committee decided to recommend Dr. Cassal, who undertook the necessary duties at 100*l.* per annum, and in addition would analyse the water. (Hear, hear.) The committee's recommendation was adopted.

THE COURT OF QUEEN'S BENCH TO THE PETTY SESSIONS.—At the Highgate Petty Sessions last week, Kenneth Annat, an elderly, respectable-looking man, of Birkbeck Road, Hornsey, was charged on a summons with assaulting his wife, Hannah Annat. The prisoner recently figured as the plaintiff in an action for libel against Platt & Co. regarding the sale of a grease-extractor made from Sunlight soap. From the evidence at the sessions it appeared that he had often been guilty of acts of violence to his wife, on occasions when he was under the influence of drink. He was formerly a commercial traveller, but for the past 10 years had not done any work, being maintained by

the earnings of his two daughters. He left his wife and them some time ago for three months, hoping to make some money, but leaving them to pay rent and taxes due. He returned and begged them to take him in again, which they did. On Sunday, the 29th ult., he returned home from a walk just as his wife and daughters were finishing dinner, and commenced an altercation with his wife. His daughters left the room, but, hearing a disturbance, went back and found him trying to bump his wife's head against the wall. Complainant prevented him from doing this, and he deliberately bit one of her fingers. The defendant said he acted in self-defence, but the bench took a different view of the matter, and sentenced him to three months' imprisonment with hard labour, and made a separation order, defendant to pay his wife 10*s.* a week for maintenance.

EXTENSIVE ROBBERY OF PATENT MEDICINES.—At the Mansion House on Saturday a young man named James Joseph Miller, who has been for seventeen years in the employment of Messrs. Barclay & Sons, patent medicine vendors and chemists, Farringdon Street, was charged with stealing various articles belonging to his employers. Although the value of the articles which the prisoner was specially charged with stealing was only placed at 4*l.* 17*s.*, it was stated that last year, although the receipts and expenditure appeared to be about the same as usual, property was missed from the warehouse to the value of 1,000*l.*, and although the police were employed, no clue could be obtained as to who the depredators were. The prisoner recently went away for a holiday, and during his absence a stock of valuable patent articles, from which a quantity had previously been missed, was found to be quite correct, and this fact created suspicion of the prisoner. On Friday he was observed to leave the warehouse carrying a canvas bag, and Sergeant Lythell, who had the case in hand, followed him to Queen Victoria Street, where he stopped him and searched the bag, and found it contained a number of articles which the prisoner had no right to have taken from the warehouse. The prosecutors had sixty men in their employ, and suspicion had been directed to the whole of these persons until the prisoner was detected. The prisoner pleaded "Guilty" to stealing the articles found upon him by the officers, but declared that he knew nothing about any other robberies. Sir H. Isaacs said he could only punish him for the original offence that he was charged with, and he sentenced him to three months' hard labour.

THE EXTENSION OF BRITISH INFLUENCE IN AUSTRALAFRICA was the subject of a lecture delivered by the Rev. John Mackenzie at the Cannon Street Hotel on Monday, under the auspices of the London Chamber of Commerce. The Right Hon. Joseph Chamberlain, M.P., presided, and on the platform were a number of gentlemen commercially or politically interested in Southern Africa, including Sir Charles Warren, Sir Henry Doulton, Mr. David Howard, Mr. Peat (of Messrs. Lewis & Peat), Mr. Rider Haggard, the novelist, and others. The object of the Rev. Mr. Mackenzie, who, we believe, has had something to do with the introduction of strophanthus into this country, was to emphasise the importance to Great Britain of maintaining and consolidating her influence in the various territories between the Cape Colony proper and the Zambesi river, excepting, of course, those districts which, like the Orange Free State, the Transvaal, &c., are acknowledged to be outside this country's immediate control. Mr. Mackenzie gave a very glowing description of the riches, mostly as yet undeveloped, of these regions, and pointed out the extreme importance of extending the railway now connecting the two principal ports of the South African Colony with the north-eastern frontier of the Cape Colony further north along the present principal trade route through Bechuanaland, and thence, eventually, as far as the Zambesi river. The lecturer addressed a numerous and attentive audience, who appeared to thoroughly endorse his views, especially when he expressed his opinion that it is Great Britain's duty to watch over the interests and guide the policy of the contending races and tribes of the territories forming the subject matter of his address.

THE DEODORISATION OF THE THAMES.—The report by Sir Henry E. Roscoe, which has been the cause of the recent action of the Metropolitan Board of Works, has been a matter of some mystery to those who have followed the various

steps which have led up to Sir Henry's appointment as consulting chemist to the Board. It will be remembered that one result of the report has been a large contract by the Board for manganate of soda, but how this is to be used has not been explained. The whole matter is cleared up in what is apparently an authoritative summary of the report communicated to the *Manchester Guardian*. In this summary it is stated that the chief difficulty is to purify the sewage by natural processes, the most important of which are living organisms, one class of which require free oxygen for their growth, and render the organic matter inoffensive; the other thrive in the absence of free oxygen and give rise to offensive products. The basis of Sir Henry Roscoe's proposals is, therefore, the encouragement of the former class and the annihilation of the latter, and as the river water contains barely sufficient oxygen to decompose the already formed offensive products, it is necessary to effect the oxidation of the sewage before it enters the river. After referring to this point in detail the report proceeds to set forth the action of bleaching powder and acidified manganate of soda. The relative oxidising power of these is that three grains of bleaching powder is equal to five grains of manganate. Experiments were carried on in order to ascertain which of the two is the more efficacious and safer to employ. In regard to the use of bleaching powder Sir Henry Roscoe is not favourably impressed with its action. It was found that a quantity of bleaching powder equal to nine grains per gallon of sewage completely and permanently stops the growth of all organisms visible under a high power; three grains per gallon appear for some time to exert an equally powerful effect; and one grain, though stopping the growth of certain organisms, seems scarcely to affect others. In using manganate for deodorising sewage it is immediately destroyed, whereas the bleaching powder disappears but slowly, it being possible to detect it some days after its addition. Apart from the consideration of cost, manganate is more preferable as a deodorant than bleaching powder. The experiments with the two chemicals were carried out at Crossness and in Manchester. The average annual cost for manganate as a deodorant is estimated at 40,000*l.*; the cost of sulphuric acid not being taken into account. Even this outlay, however, will not suffice to prevent a foul condition of the river during the summer months. The only other feasible plan in Sir Henry's opinion is that of direct aeration, by pumping air into the sewage, but meanwhile it is proposed to add manganate in a moderate quantity—three grains per gallon—during those periods of the year when the dissolved oxygen falls below 20 per cent. of the possible maximum, or the chlorine exceeds 200 grains per gallon.

Provincial Reports.

Items of news, and newspapers containing matters of interest to the trade, sent to the Editor, will much oblige.

BARTON-ON-HUMBER.

HOW ANALYSTS DIFFER.—At the local police court a case of a remarkable character has been decided this week. On April 16 last Joseph Reynolds, of the Swan Inn, Barton, was summoned for selling to Police-inspector Ward a pint of liquor which was not of the nature, substance, and quality of the article demanded. The sale having been proved, the certificate of Dr. Graham, of University College, London, the public analyst for Lincolnshire, giving the result of his analysis, was put in. This certificate stated that the liquor was not brandy, but alcohol coloured and flavoured to imitate brandy, and that it contained 76½ degrees of proof spirit. This certificate was disputed, and the third sample of the liquor was sent to Somerset House for analysis. When the case came before the magistrates the other day, the clerk to the justices read the certificate of analysis which he had received from Somerset House, and which was to the effect that Dr. J. Bell, Mr. R. Bannister, and Mr. Helm certified that the liquor contained 80 per cent. of proof spirit, and that it was brandy. The case was at once dismissed.

BIRMINGHAM.

WELL POLLUTION.—INTERESTING CROSS-EXAMINATION.—At the Police Court on Friday of last week an important case of alleged well pollution was heard against Mr. George Shaw, formerly professor of chemistry at Mason College, but now carrying on business as a patent agent in Temple Street. Mr. Shaw was charged with having on his premises, 119 Whitmore Road, a well, the water of which was so polluted as to be injurious to health. Dr. Fred Hill's analysis showed that the liquid from well contained 148 parts per 100,000 of solids; nitrates and nitrites, 6.6; ammonia, .001 previous contamination by sewage, 65.69; and chlorine 11.2. Such a quantity of chlorine distinctly showed that urine had gained admission, and the presence of a large percentage of nitrates pointed to the same end. Dr. Hill went into the witness-box, and in the course of the cross-examination Mr. A. Young asked him whether he was not aware that Mr. Shaw was formerly a professor of chemistry at Queen's College.—Dr. Hill: Yes, I am. And taught you in your earlier days? (Laughter.)—Yes; well, he tried to teach me, according to your cross-examination. (Laughter.) Mr. Young: Perhaps you ceased to be his pupil too early? (Laughter.) Dr. Hill, in reply to other questions said that the nitrites came from decomposed animal matter. A chemical process could prove that a particular nitrite came from decomposed animal or decomposed vegetable matter. He would not pledge himself that the percentage of nitrites in the water in question would have the least possible harm upon the health of the drinker of the water. Mr. Young: Have you never heard that the theory upon which the whole of this case is based—calculating on the assumption of "previous sewage or animal contamination"—has been long ago exploded? Dr. Hill: No; and it never will be exploded. Mr. Young read an extract from a paper contributed by three eminent water analysts to the *Chemical Review* in 1882, which expressed the opinions of the authors that certain "scarecrow" terms would "follow in the wake of their fellow expression 'previous sewage contamination,' which no longer pointing a moral in the right direction had been judiciously though tardily abandoned." Dr. Hill said he did not agree with that. He admitted that Dr. Frazer, the inventor of the term, had abandoned it so far as it was used in one of the columns in his calculations, but he was not aware that he had abandoned the theory. He assumed that the presence of 11.2 parts of chlorine was due to animal urine, because the unpeopled soil of Birmingham did not contain one part of chlorine in 100,000. Mr. Young: The presence of this chlorine, or common salt, would not injure the health of anyone drinking the water?—Dr. Hill: No. That ammonia is the same as in corporation water, so that there is really nothing injurious to health in these quantities?—No. And the object of determining those quantities is to ascertain whether there is anything so injurious?—Yes. Supposing I prove that Mr. Shaw has been drinking freely of his water for twenty or twenty-five years and has never had one day's illness, would not that lead you to calculate that the water could not be so polluted as to be injurious to health?—No. Mr. Young: Well, science may be one thing, but practical knowledge and experience are another. The fact that the family have never suffered would still leave undisturbed in your mind that it was the proper thing to stick to the "previous sewage or animal contamination"?—Dr. Hill: Yes. You know very well that there is a very large school of eminent chemists who maintain that the presence of nitrites in well-water is no indication whatever of anything injurious to health?—There are some who do. Some discussion took place between the Bench, Mr. A. Young, and Mr. Parker, when Dr. Hill made an observation. Mr. A. Young: You are not an advocate, Dr. Hill, and have no right to speak as an advocate. Dr. Hill: Well, I am there only one on our side, and you have an army. Mr. Goodman: Do you say this well is injurious to health, Dr. Hill?—Dr. Hill: No; I say it is dangerous, and likely to injure health at any moment. Mr. Goodman: I think we must dismiss the case. Mr. Parker: On what grounds, your worships?—Mr. Goodman: You have not proved that the well is so polluted as to be injurious to health. Dr. Hill: There is a danger constantly hanging over it. Three other cases of similar character were dismissed without any evidence being taken.

Prof. Attfield was to have been called for the defence, but as the case broke down his evidence was not required.

BELFAST.

NOTES OF IRELAND CHEMISTS AND DRUGGISTS' ASSOCIATION.—At a meeting held on April 30 the following resolutions respecting the proposed Bill for the Amendment of the Pharmacy Act (Ireland) were adopted, and have been forwarded to Lord Milltown:—(1) "That nothing but a permanent and standing examination can, or will, meet the wants of our trade, as the mere arrangement for those in trade 1875, as contemplated in the new amendment, will not cover the large number of apprentices and assistants who are now in the various establishments." (2) "That anything less than the title 'chemists and druggists' will not satisfy our body, as this is the title properly belonging to them." (3) "That there can be no possible distinction between those in our trade prior to 1875 and those since, to cause one class to be designated 'chemists or druggists' and the other 'chemists and druggists.'" A report from a deputation appointed to collect funds towards the Association was handed in, and showed that nearly 150% was raised, and that a number of amounts were yet expected.

DUBLIN.

THE HORSE-POISONING CASE.—In the Nisi Prius Court, on May 2, the case in which Captain Holloway Steeds applied for compensation for the alleged malicious poisoning of a number of horses belonging to him at Clonsilla, was decided. The applicant claimed 3,700% for the loss by poisoning of thirty-eight horses on October 8, eighteen of these having died. The witnesses were examined on the previous days, and in the course of his charge to the jury, Mr. Justice O'Brien said that all the scientific evidence had been given in support of the application. The theory of accident depended upon the circumstance that a poisonous material was kept in destroying weeds in Captain Steeds' establishment. This "weed-killer" contained carbolic acid; and Sir Charles Cameron, Mr. Moss, and Professor Tichborne, all agreed that there was no carbolic acid in the poisonous mash or the poison viscera of the horses. As a matter of fact, they all depose that the poisoning was not done with the weed-killer, but that the theory of accident was at an end. Professor Tichborne told them that he could have detected the fifty-thirtieth part of a drop of carbolic acid—a gigantic degree of minuteness. Arsenic was the poison which had apparently been used, and the jury, after some trouble with one of their number, so found it, and awarded Captain Steeds 3,000% damages.

SHEFFIELD.

THE MICROSCOPE AND FOOD ADULTERANTS.—At a meeting of the Sheffield Microscopical Society, held on Friday evening last, Messrs. J. O. Arnold and B. W. Winder gave a lecture on the microscopical detection of food adulterants. The lecture was illustrated by a number of lantern transparencies taken from photo-micrographs made by the authors. The articles mainly referred to were mustard, pepper, coffee, and cocoa. In all cases the purity of the article, as shown to be directly proportional to the price paid for them. Some most striking photographs were taken by means of polarised light, starch and sugar in cocoa and pepper being among the most remarkable. The lecture was an excellent illustration of the value of photo-micrography in conveying microscopical teaching to large audiences.

The "Camera Club" is the latest photographic combination in Sheffield. It already gives great promise of success.

YORK.

SEVERAL CHARGE AGAINST A SNAITH SURGEON.—At the Police Court on Thursday, Mr. George Fernley Atkinson, surgeon of Snaith, West Riding, was charged under the Debtors Act, 1869, with making a false statement in a written document relating to his affairs. Mr. Welsh, who prosecuted, said that the defendant filed a petition in bank-

ruptcy on March 28. In the January previous he went to the York office of Messrs. J. Boothroyd & Co., loan agents, of Huddersfield and York, and in order to obtain an advance from them signed a paper stating that his debts did not exceed 200%, that he was not a borrower from any other loan office, that his furniture was absolutely his own property, and was worth 600%, and that there was no bill of sale or marriage settlement over any of his property. On the strength of this statement an advance was made to him. When, however, the defendant presented his statement of affairs to his creditors, it appeared that he owed nearer 2,000% than 200%, that his furniture was settled on his wife four years ago, and that last year he had borrowed money from two persons. The defendant reserved his defence, and was committed for trial at the next assizes.

SCOTLAND.

DUMFRIES.

INFIRMARY CONTRACTS are proverbially hard to get when they have to be estimated for. This is the case with the Dumfries and Galloway Royal Infirmary contract for drugs. The managers recently advertised for a year's supply, dating from May 26, and the firm who have been fortunate (?) enough to get the contract offered to supply the goods at 8½ per cent. below the price-list prices of one of the leading Scottish wholesale drug houses. This looks like trying a race with the contractors for the Paris hospitals.

DUNDEE.

UNIVERSITY COLLEGE.—At a meeting of the Council of University College held last week, plans of the new chemical laboratories for instruction in dyeing and bleaching were submitted. These are to be erected in consequence of an agreement with the Technical Institute. After consideration it was agreed to spend 1,200% on the building, and it was intimated that Mr. W. O. Dalgleish, one of Sir David Baxter's trustees, had agreed to give a donation of 200%.

EDINBURGH.

THE weeding-out process still goes on. The business in Merchiston Terrace lately carried on by Mr. Reid, and formerly by Messrs. Bowman Bros., has been abandoned, and the shop is now closed.

ANOTHER drug business which has of late years had a somewhat vicissitudinous career in the principal thoroughfare of the south side of the town is, we hear, likely to be discontinued.

AN OVERDOSE OF BROMIDIA.—At a late hour on Tuesday a student named Addis, residing at Morningside, was admitted to the Royal Infirmary suffering from the effects of an overdose of bromidia, as well as from swallowing two suppositories of morphia. The patient was treated in the usual way, and no serious results are expected to follow what is understood to be a case of accidental poisoning.

MACDUFF.

DRUGS FOR THE POOR.—Some years ago the late Mr. J. Hay Henry, pharmaceutical chemist, made an arrangement with the Gamrie Parochial Board to supply all the physic required by the inmates of the poorhouse for an annual payment of 7%. Since Mr. Hay's death this arrangement has been continued by Mr. Stephen. At a meeting of the board held last week an account for "extras" was submitted, the amount being 2% 13s. 10d., and including such items as extract of meat and malt extract. This account called forth some critical remarks from clerical members of the board, and one member said that the doctor had no right to prescribe "every new and patent medicine that comes into the market." Mr. Stephen, who happens to be a member of the board, explained that the items of the account were really not medicines but food stuffs. It was further explained that as much as 15% or 16% worth of medicine was supplied in the course of the year, and the chairman said that it was all nonsense to be bound to dispense such a quantity of medicine for 7%. Mr. Bow said it would be a good idea to let the doctor supply the medicines; then he would be as economical as possible; but Mr. Simpson pointed out that it would be salts and senna that the paupers would

get, and none of the expensive stuff. The chairman said it was quite apparent that neither of the druggists could be expected to supply 15% worth of medicines for 7%. The question was, whether it would be the best plan to give an additional sum or to pay for medicines that were ordered. Ultimately it was agreed to let the account lie on the table until the next general meeting.

FRENCH PHARMACEUTICAL NEWS.

(From our Paris Correspondent.)

FOUR PROFESSORS are wanted at the same time for the Clermont-Ferrand School of Medicine and Pharmacy, to fill the chairs of physics and chemistry, pharmacy and materia medica, natural history and pathology, and internal clinics. Competitions for the vacant positions will be held on November 5, 9, 14 and 19.

THE BAS-RHIN PROVIDENT MEDICAL ASSOCIATION, formerly connected with the Strasbourg Medical Society, just suppressed, has been allowed fifteen days to properly Germanise its statutes. Otherwise it must cease to exist. The Haute-Alsace Medical Society has been by the same decree unconditionally suppressed. But they were guilty of keeping company with some of their medical and pharmaceutical brethren residing in the neighbouring French district.

THE ANNUAL CONGRESS OF SCIENTIFIC SOCIETIES will be held during the week beginning on Monday, May 21. On the day in question the opening session will take place at 1.30 P.M., in the Ministry of Public Instruction, 110 Rue de Grenelle, where the following sections will thereafter meet, namely, the sections of history and philology, archaeology, economic and social sciences, sciences proper, and geography. The beaux-arts section will have their meeting-place at the Beaux-arts School, and on Saturday, 26th in the afternoon, the closing session of the Congress will be held at the Sorbonne, and presided over with due ceremony by Minister of Public Instruction Lockroy. The proceedings of the section of sciences proper are expected to be this year quite interesting.

VANILLIN-PHLOGLYCINE AGAIN AT FAULT.—Some time since fault was found with this reagent for apparently indicating the presence of hydrochloric acid when none existed in the free state. Now Dr. Lépine, of Lyons, charged it at a recent meeting of the Society of the Medical Sciences with not showing the same acid when it is actually present. When the gastric juice under examination contains albumen and peptones, several drops of hydrochloric acid may be added to the liquid without causing the red colouration to be manifested. Some sort of explanation was offered for such a failure of Günzburg's test. But it seems the reagent is in diagnosis as unreliable as it is chemically, for a patient in a Lyons hospital, who had been on the faith of Günzburg's test considered to suffer from stomachal carcinoma, was found after death to have had a perfectly healthy stomach, and to have succumbed to an intestinal cancer.

IMPROVEMENT IN SACCHARIN.—A great objection to saccharin is its very sparing solubility when pure. The defect is corrected by the addition of an alkaline bicarbonate, but it is often at the expense of the sweetening properties of the chemical, which sometimes acquires almost a bitter taste. Flies, bees, and other insects will not touch saccharin in any shape, but as man, who is not so good a judge of sweets, likes it, let it at least be cooked up and served to his taste. M. P. Mercier recommends the following process. Take of—

Pure saccharin	..	..	..	10 parts
Distilled water	..	..	..	5 "
Soda bicarbonate	..	..	..	4 to 4.5 parts
Alcohol (95°)	..	..	..	20 parts
Sulphuric ether	..	..	..	sufficient

The bicarbonate is to be added by small portions to the saccharin mixed with the water, about half-an-hour being allowed to pass between each addition, and the mixture being stirred occasionally to hasten the combination and the evolution of carbonic acid gas. It is important to cease adding bicarbonate before the saccharin is entirely saturated.

The operation requires 10 to 15 hours. Next the alcohol is added to the mixture, with the effect of throwing down most of the soda saccharinate, and holding in solution the excess of saccharin and impurities; and finally the magma is thrown on a vacuum filter, where it is washed, first with more alcohol, and lastly with sulphuric ether. On drying in the open air a white, exceedingly sweet, and soluble crystalline powder is obtained, which possesses all the properties of saccharin. Some of the chemical features of the foregoing process may be briefly alluded to. It will be noticed for instance, that no heat is employed. The reason is that under the influence of heat soda will readily transform saccharin into salicylic acid. Then the use of barbonate instead of carbonate of soda is not indifferent, as the presence of caustic soda, always to be feared in carbonate will turn the saccharin into a *para*-compound possessing no sweetness. Lastly, the use of alcohol as a precipitating agent renders heat unnecessary, and removes many impurities found in the purest commercial saccharin.

TWO PATIENTS POISONED BY COLCHICUM.—The Strasbourg Correctional Tribunal, on May 14, sentenced Dr. Flocken to nine months' imprisonment, pharmacist Greiner to two weeks', and pharmacist assistant Wolf to two months' in consequence of the colchicum poisoning case alluded to in THE CHEMIST AND DRUGGIST of December 10, 1887, page 737. The technical offence of the first prisoner was homicidal through imprudence, and of the two others aiding and abetting in concealing the offence. The trial appears to have caused some sensation in Strasbourg, owing to the standing of the parties implicated, and the fact that such experts as Professor De Mering, Dr. Schrader, Professors Schiedeberg, Flückiger, and Huseman, besides Dr. Krieger and Jarmais Pfersdorff, appeared for either the prosecution or the defence. Briefly told, the accidents occurred as follows. Dr. Flocken prescribed for two patients in succession, in a first or five-ounce mixture half a drachm of extract of colchicum combined with lithia and salicylates, the dose being a tablespoonful every hour. The first patient, one M. H., died after the second dose, and the second, named H., after the third, notwithstanding all antidotes and medical treatment. Wolf, the assistant, was negligent in dispensing such a dose of a poisonous preparation, which subsequent events proved to have been by mistake ordered instead of tincture of colchicum. He had not even the excuse of the disorderly state of the bottles, since Dr. Flocken had clearly stated to be one tablespoonful. As to Greiner, the pharmacist, he did his best to aid the two persons chiefly implicated in concealing all proofs of the offence. The old prescription book was destroyed, and a new one procured, on which the former prescriptions were re-copied, together with an amended edition of the poisonous mixtures, while Dr. Flocken managed to secure the original prescriptions returned to the patients' attendants and throw away all there was of the medicine in the bottles. But all was in vain, and for once the truth came out, mostly through Wolf's confessing all he knew. The expert testimony, although interesting so far as it bore on the case, added nothing to what is known of colchicum preparations. As to the trial itself, it has already been stated.

ACETANILIDE is so apt to induce collapse when administered frequently and in large doses, that some French physicians have expressed the opinion that chemists should not be allowed to dispense it without prescription.

SEA-SICKNESS follows the motion of the vessel, good ship, or bad, heavens, so does the luckless passenger to loose grip of his existence, and this, according to Dr. J. Leiser, is because the respiration is unconscious time with the motion of the ship. Given regular breathing and there will be no sea-sickness. Drs. Stoen and Prentice, of the s.s. *Etruria*, have tried how carefully doctor took five patients to the most dreadful of the deck and got them to breathe regularly at the rate of 20 inspirations per minute, and at the end of an hour symptoms had abated. This result was a sufficient argument for the sufferers to pay attention to their breathing, so long as they did this they had no sea-sickness, and the experiment is worth trying.

Pharmaceutical Society of Great Britain.

THE CONVERSAZIONE.

THE Council of the Society took a new departure this year resolving to hold the annual conversazione in their premises, and on the evening before the annual meeting of the evening of the same day. The South Kensington affair has generally cost the Society two or three hundred pounds, and some three or four thousand people have enjoyed the entertainment, more or less, out of the expenditure. Tuesday's arrangements were not lavish at all, but the whole of the old and new buildings were thrown open, doors were removed to prevent crush, hothouse plants helped to decorate passages and block the ways which were not to be passed, and for once the library as well as the old examination rooms were given up to the worship of the gastronomic god, but the people did not come, the thousands had dwindled down to hundreds, a grand total of 265 having passed the men in blue whom Sir Charles Warren had sent to direct the proceedings.

If, therefore, we are to regard numbers as the token of success, Tuesday evening's meeting was a distinct failure. What of those who did attend? Not a single lady graced the assembly, though there be some on the membership roll of the Society. The company began to arrive at 8.30, and, after passing through the museum and library, were received by the President and Council in the Council room. People were free to do what they chose. The chemical and pharmacy laboratories were open, and received a goodly number of visitors. Mr. Ince's arrangements for teaching young men ought to learn during their pupilage were much admired. Needless to say, however, the new examination hall and the research laboratories were the centre of attraction. In the hall an excellent string quartette discoursed sweet music from 9 o'clock, and, while the howls of the strings, conversation was as animated as it could be. The dispensing and chemical laboratories were meanwhile closely inspected, and upstairs the research laboratories received considerable attention. There are four young men, including the demonstrator, at present engaged in research, so that the arrangements in one at least of the laboratories are complete. In this several simple operations, such as distillation of water under reduced pressure, and ordinary distillation in that old-fashioned copper still of Emeritus Professor Redwood's, were going on. A few pieces of apparatus were scattered about, and, simple though the show was, it served to keep the laboratory in a fairly crowded state during the whole evening. The same was the case with the balance-room and Professor Dunstan's room, in which an excellent polarimeter was on view.

Exhibits are, of course, the thing to draw a company; and as there was little endeavour either by announcement or actual display to attract people by these means, it is, perhaps, not surprising that so few turned up. Those who did appear to enjoy themselves, and to admire the style and fittings of the new premises.

The company was largely composed of assistants. There were few outsiders present, this being due, we understand, to the fact that few members of the medical and scientific professions were invited. It was a meeting of pharmacists pure and simple; as such it was not surprising to see Mr. Bruner, the President of the Pharmaceutical Society of Ireland, present; and he with Mr. Carteighe, the President, and Mr. Flux, the solicitor of the British Society, made an interesting group, whose conversation doubtless was of a legislative which at present troubles so sorely the two Irishmen who are at the head of pharmaceutical affairs in this island. In the course of the evening Professor Green received a number of visitors in his private room, amongst them being Sir Edward Sieveking, who appeared to be much impressed with the research laboratories.

FORTY-SEVENTH ANNUAL MEETING.

THE annual meeting of the Pharmaceutical Society of Great Britain was held on Wednesday, May 16, at 17 Bloomsbury Square, at noon. Mr. Michael Carteighe, President of the Society, took the chair a few minutes after the appointed hour. The attendance was unusually small.

After the Secretary had read the notice convening the meeting, and the report and financial statement had been taken as read,

The PRESIDENT moved the adoption of these. He said the fact that this was the forty-seventh annual report indicated that the Society was approaching its jubilee year, and it might be convenient at this early period, while they were all, no doubt, impressed with the value of the work which the Council had done for them, to bear this consideration in mind. Seriously, the fact that the Society had reached its forty-seventh year, had a charter and two Acts of Parliament, was sufficient to prove that it had a history, and that in the consideration of questions affecting their interests they must look backwards as well as forwards. Turning to the report before them, they would see that in some items the receipts had been less, and in some greater, than in previous years. They would probably prefer that he should allude more particularly to the items in which there appeared to be a falling-off. The reduction of something like 100% in the receipts from subscriptions of members, associates, and apprentices, he looked upon not solely from a money point of view. The reduction in the numerical strength of the Society was still more to be regretted. It was to their own interest, and to the interest of the Society, that all those who pass the examinations should join the Society, and he was glad to say that among the younger men there was a very satisfactory increase of the tendency in this direction. The "chemist and druggist members" must die out, and they could only be replaced by the "pharmaceutical chemist members." The former, he might remind them, were the chemists and druggists who were registered in 1863, and who had the right to become members of the Society on payment of a fee. But he repeated that the Society was receiving a larger share of support from the young men now coming into the trade. Another item in which there was a decrease in the income of the Society was that of the journal account, in regard to the receipts for advertisements. This was accounted for by the fact that, while formerly they were the only journal issued weekly to the trade, some two years since some of their colleagues—he would not say rivals—had also changed their issues from monthly to weekly. And the result had been that a good many prudent advertisers had decided to divide the money they spent among two or perhaps three journals, so that their own share of it had become less. The probability was, however, that they now knew exactly what were their relative advantages and disadvantages, and he did not anticipate that matters would get any worse; he hoped they would get better. But it was unreasonable for them to expect that they should continue to maintain the little monopoly they had previously enjoyed in regard to the advertisements which required immediate answer. They must not complain of this competition; it existed among themselves as well as among journals; it was the tendency of the time, and they must submit to it. The examination fees showed an increase; but it must not be supposed that of the 1,180 who had attempted to pass the Minor examination anything like a thousand individuals were represented. The actual number was probably about 450, certainly under 500. The receipts from invested capital were, of course, less by the interest on the sums which had been sold out. In regard to the ordinary expenditure there was not much to call attention to, except perhaps in respect of two considerable changes which they had made in their teaching staff. During the year Emeritus Professor Redwood had withdrawn from the rooms which he formerly occupied in the house, in order that these might be at the disposal of the Council. The retirement of Professor Bentley had also compelled them to make some alterations in their teaching staff; and this had necessitated some special expenditure in apparatus, microscopes, &c., and also in such alterations as do not occur every year. They had also during the year done some internal painting, as they were required to do by the terms of their lease. This had not been done for six years previously. The figures no doubt looked considerable, but it must be remembered that it was the desire of the Council to keep their premises in fairly good repair, and not to follow the example of the House of Commons, which seemed to be to spend money in an occasional panic and then to retrench. Salaries were a little more than usual; this was partly accounted for by the fact that in the year reported on there were fifty-three pay days. An addition too had been made

to the stipends of the editor and sub-editor, which appeared in full for the first time in these accounts. The law expenses were, of course, variable. He would like to say that it was not for want of will that their solicitor's bill was not larger. The Council had the disposition to spend more money if they could do so to the advantage of the Society and of the public generally. Their new building had cost money. As they knew, this had been undertaken primarily in order to provide a fitting and dignified establishment for the conduct of their examinations, and, besides, to provide rooms for the purposes of pharmaceutical research. The approach to this hall was not at present dignified, but they would soon have the opportunity, if they chose to take it, of making an approach from Bloomsbury Square. The two houses next to them which they had taken would not fall into their hands until about another year, and the then Council would have to decide on what policy they would adopt in regard to them. They might decide according to their resources whether to use them for Society purposes or whether to treat them as an investment. As far as they could judge from statistics it appeared that a fairly large number of their members availed themselves of what he might call their stock or fabric. He hoped it would not be thought egotistic if he said the Council were ungrudging in offering facilities for the use of their library. Some of their members in the country complained of the little they got from their membership; the Council were not able to assist them in reducing their overwork, but they did what they could by offering them on very easy terms the loan of any books at all associated with their occupation. He had next to refer to the resignation of their old friend Professor Bentley. He was sorry to say that the Professor had been in failing health for some time, and last year he thought it was his duty to resign at the comparatively early age of sixty-five. The Council had resolved to grant him a pension of 100*l.* a year—(cheers)—and he hoped the Professor would live long to enjoy it. He mentioned this to show that their responsibilities were increasing. Under the new teaching arrangements the interest in all the subjects was well distributed. The Council had reason to be thankful for the generous response which had been made last year to their appeal for the Benevolent Fund. The dinner had brought them 1,600*l.* in donations, and he considered that, having regard to the many claims put forward last year, that result was very gratifying. He hoped too the members would pardon the Council the special piece of extravagance in which they had indulged in granting to all the annuitants an extra sum of 5*l.* each in commemoration of the Jubilee. The subscriptions to the Benevolent Fund had also last year been somewhat better than before, and this he personally considered specially gratifying, because from subscriptions they could deal directly with the distress of the present generation, while according to their by-laws they could only employ the interest from donations. He believed that as a rule the distress of each generation should be borne by those of that generation. After an appreciative allusion to Mr. John Williams, an ex-president, and one of their earliest students, who had retired from the Council last year, the President proceeded to make some remarks in reference to the Pharmacy Bill, on which, he said, and on other subjects, he had so often made observations in the Council that he might claim to have done a great deal for the benefit of the journals of the trade, which benefit he hoped was duly appreciated. The members had again and again decided that in the interest of the candidates themselves they should be required to go through a course of study in the subjects on which they were examined, and that the Preliminary examination should be passed as early in life as possible, at or near the beginning of apprenticeship. Their Bill which had been introduced into the House of Lords this session had been drawn to accomplish these objects. As was well known the noble lords, having had representations made to them in regard to the manner in which in some parts branch shops were conducted by unqualified managers, sometimes even by boys unqualified by reason of age, had thought fit to introduce a clause in reference to this matter, and though he had represented that this would make it more difficult to pass the Bill in the House of Commons, they had sat upon him, so that when their Bill emerged from the House of Lords it had become partly an education Bill and partly one concerning trade interests. Since the Bill had been introduced into the House

of Commons there had arisen a good deal of opposition on the part of some members on behalf of the unqualified managers. It was represented that the Council had always held that it was only the owner who was required to be qualified, and it had been forced upon him in the lobby of the House that when they introduced their former Act they had themselves proposed that every apprentice and assistant in the trade should be admitted to a modified examination. The Government at that time had not been willing to go so far and had limited the right of passing the Modified examination to men of twenty-one years of age and upwards. In view of these considerations, and when men of forty-five years of age, with a dozen children, wrote to members of Parliament urging that if the Bill was passed they would lose the means of obtaining a livelihood, the sentiment of the members was aroused, and there was a strong opposition. He did not see that the Council could do other than acquiesce in the modification of the clause if they wished the Bill to pass, and he appealed to the qualified men in the Society to support them in this matter. He hoped the members would not try to define exactly the terms to be arranged as to what constituted a manager. It was not their intention to include boys of nineteen nor men who became managers just to get a licence. Nor did they propose to give the unqualified managers any qualifications, but he urged that it was under the circumstances equitable and honourable that they should be left alone. The President wound up a speech, occupying nearly an hour, by appealing to friends all over the country to assist them by influencing their representatives when they were called upon. When the Council should ask for such assistance would they believe that they had good grounds for believing it to be necessary. The House of Commons did not care a rap for pharmacy, and they had no one in the House like Jacob Bell to make them care for it. So that they could only exercise influence by this kind of education; but the members might be sure that they would not be troubled until the Council really thought it necessary to act.

Mr. T. P. GOSTLING, Vice-President, having very briefly seconded the motion for the adoption of the report.

Mr. POND rose to call attention to the loose manner in which the balance-sheet was drawn up. He instanced particularly the amounts drawn from the Society for the Bremridge family. The total sum he made to amount to 2,400*l.*, and he proceeded to pick out the items, such as the annuity to Mr. Elias Bremridge, 400*l.*; house expenses, rent, taxes, and insurance, 400*l.*; salaries, &c., nearly 1,400*l.* His complaint was that the whole was mixed up in a way that it was difficult to trace the expenditure. He next the *Journal*. According to the Council's showing there was a deficiency of 300*l.*, but it is really over 1,000*l.* they put down lower down the sum of 720*l.* for postage and of the *Journal*. He had simply mentioned these matters to show how loosely the balance-sheet was made up. The Society was evidently tending downwards; the fewer advertisements showed that advertisers think it is going down. If they wanted to get young men to join the Society they must do something more for the trade. He should think there was a screw loose somewhere when three or four members of the Council united to keep out one candidate who wanted to do something or their good.

Several members of the Council repelled this innuendo with cries of "Name," and Mr. Pond was given to understand that none of the authors of the circular to which he referred were members of the Council. "Well," he said, "I very seldom read your *Journal*," and sat down amid much laughter.

Mr. HOWARD HALL said the previous speaker had touched upon points which he regarded as coming into his province. He had drawn up a comparative statement of the finances of the Society for the past ten years, and proceeded to give the members the benefit of some of the items. Referring to annual grants, he said he believed one had been made to Aberdeen, but he could not find it among the expenses.

The PRESIDENT suggested that it might be found in last year's report.

Mr. HALL thought it desirable to call attention to the apparent omission. With regard to the new building he did not know what had been spent on it, but he considered it was a very judicious expenditure. Examinations were the chief source of income the Society had, and it was

conducting them with every convenience. Passing on to the *Journal*, Mr. Hall commented for some time on the largeness of the cost for paper, which he found was 25 per cent. of the whole cost. He would rather see more money spent on contributions and engravings. He confirmed the remarks of the previous speaker as to the difficulty of tracing out the expenditure. "Nobody knows," he pathetically added, "the amount of time I have to spend over these accounts." Passing to the law expenses, Mr. Hall pointed out that the cost was treas much as the penalties recovered. In view of the month to extend these operations it was worth considering whether the game was worth the candle. He had found that the average annual law costs in the past ten years had been 2%. Then he digressed into the narration of a case concerning a friend of his, a draper, who had been selling medicines as the agent of a chemist, and who had been threatened by the Pharmaceutical Council. He would like to know what the law was on this point. He was very sorry the Council were going to make concessions to the unqualified managers; they would lead to the licensing of every Dick, To, or Harry who had ever had anything to do with a chemist shop.

Mr. BARNARD, Stamford Hill, in support of the case of the unqualified managers, instanced a friend of his who at the time of the passing of the Pharmacy Act was six months too young to be eligible for the modified examination. He also argued that it was only fair that due consideration should be given to those who had invested money in these shops. What was more needed was that something should be done to prevent the conduct of open surgeries by unqualified men. That was the question the Council should endeavour to solve. It was very well for the select few at the West End to disregard these things; they did not know the difficulties they had at the East End.

Mr. MAS wanted to know what young men were to get when they had passed all these examinations. If they applied for a situation they often found that they lost it because the owners preferred to engage an unqualified man, who would come to them at the same rate as that paid to the man who carried the hod. He could not help getting warm on this subject. The House of Lords had been more considerate of the interests of qualified men than the Society had been.

Mr. WICK added some financial criticisms. Referring to Mr. ALL's remark upon the new building, he said he did not know how it was possible to know whether the investment was wise or not unless they knew the cost of it. He noticed that the receipts during the past year had only been 5000l. above the expenses, and he thought the time was come when they must begin to economise. They had taken 6,000l. from their invested capital, and on that not only would they not receive interest, but it would occasion them many expenses in servants, &c. He thought it right, therefore, to raise a note of warning. He regretted to see that the provincial branches did not apply more freely for grants; on the other hand they had to congratulate themselves on not spending the money. He thought they might safely leave the question of branch shops in the hands of the Council, hoping, however, that they would not give way more than they did help. For his part, he had no sympathy with those who employed unqualified men; it was they who flooded the trade with such men, and encourage them to establish themselves in business in illegitimate competition. If those who introduced these unqualified men into the business belonged to a trade union, he should think they would be cut adrift. Mr. Urwick asked if the premises they had taken were leasehold or freehold?

Mr. ALL asked if it was known how many branch shops employing unqualified managers there were?

The PRESIDENT said he could not tell, but he should think the number would be considerable. He had learned that in an area of only two miles in the south-eastern district of London there were no less than sixteen.

Mr. CKARD would like to know, when the President answered Mr. Urwick's question, how long the ground-rents under her side of the account had to run, and whether the Council had reason to anticipate an increase of value in the premises when these fell in?

Mr. TOBEY stated the case of a student in the school who explained that for the past three Wednesdays the Professor of Chemistry had not given his usual lecture, and asked for an explanation. He had written to the secretary,

and had had a reply, but the effect of it, which he stated, was not audible.

Mr. BLAND said he had been immensely astonished at the President's statement that the House of Commons did not care a rap for pharmacy. He had himself been of that opinion for a long time, but he did not know it was shared by the President. He would advocate that the course which the President proposed in reference to the branch shops, to let them alone, should be adopted towards the House of Commons, the House of Lords, and the General Medical Council—let them alone. They had a Pharmacy Act, and what did it give them for all their expense and trouble? They had 90 per cent. of their trade taken from them, and they had left the privilege of selling a pennyworth of white precipitate powder. He would be glad to be without the privilege. It was that part of their business which led to more difficulty than any other. People did not always like to be asked what they wanted oxalic acid or white precipitate for. He would advise that they should let alone the Bill they had now in Parliament. He remembered their terrible curriculum scheme, embracing some thirty scientific subjects. If the President were to tell him that they expected with all their able professors to teach all that to young men in ten months, he should not say he was saying the thing which was not, but he should look upon him as a new Baron Munchausen. What becomes of all our best students now? They go into something better. The Society is in the position of a hen which has bred a duckling, and sees it enter the water while she is left desolate on the shore. He thought there was a tendency to push the theoretical side of their business too much, and not to give enough attention to its practical requirements. He thought, for example, the Society might do something for them with the Commissioners of Inland Revenue, who, he understood, were contemplating more extensive raids upon them than before. It was not right that that department should be not only the administrators of the law, but practically the legislators. He did not think they should have to go before the Board with bated breath to ask them whether they might sell this or that, and he did not think the Commissioners interpreted the Act in the spirit in which it was created.

Mr. LONG said this seemed to be a period of alarms. They were having alarms about the army and navy, and now they had one about their own position. The case with them was most peculiar. A little while ago they had a plethora of funds, and they then decided that they could not spend their money more advantageously than by establishing a research laboratory where they could investigate the uses of the medicines which formed the basis of their business. Now they were getting funky about whether they could keep the ship afloat. The question Mr. Pickard had asked he thought was a very important one.

Mr. POND suggested that the Council should give advice to their members about the liability of medicines to stamp duty.

Mr. URWICK said it was impossible for them to give advice, because the authorities at Somerset House themselves did not know, and gave varying decisions.

The criticisms stopping for a moment, the PRESIDENT seized the opportunity to make his reply, which was given in his best style. Respecting the criticisms of the financial statement, he declared that their accounts of income and expenditure were as full as it is practicable to make them. Indeed, he knew of no society, nor indeed of any business company, who gave so much information respecting their position to its members or shareholders. This was sometimes a great disadvantage. Would they in their businesses show their balance-sheets to their competitors? That is what they were doing for the benefit of other journals. What did they elect the Council for at all, if not to do business of this sort for them? They selected twenty-one men, supposed to be men of some ability and men of honour, to do this work for them, and then they wanted them to give details down to the washing bills. How much did the Bremridge family get out of this? He hoped his young friend by his side (Mr. R. Bremridge) would not mind this reference, but for the sake of his dear old father, Elias Bremridge, he would say that whatever they received from them it was not a fourth of what they merited from them. And when he said that he said it with a perfect knowledge of what had been done. Mr. Elias Bremridge was one of those men who would work night and day to accomplish a piece of

work he had taken in hand, and he had sacrificed his health and his hearing in the service of the Society. When they were trying to pass the Pharmacy Act, Mr. Bremridge did so work for them, and when it was over it was found that he had lost for life his hearing—one of the joys of his life gone for ever. They must leave the Council some responsibility; if they did not they were simply wasting their time. At any rate they were wasting his time, and he did not care to come down there fifty, a hundred, or a hundred and fifty times a year for no useful purpose. If they were paid five pounds for each attendance as directors of a company they would be treated better than this. They had nothing to conceal in their financial statement, but some reticence was necessary. It had been assumed that they had separated the postage item from the *Journal* account so as to make the loss look smaller. Did Mr. Pond really think that they had done this expecting to deceive the experienced financiers who criticised them? The postage was an expense perfectly distinct from the *Journal*. If he bought a journal he paid for the journal, and he paid for the postage in addition. Of course he knew there were journals who made a bargain with their subscribers and included the postage, but it had to be considered. This was not in the strict sense a balance-sheet; it was not a profit and loss account. If it were, he maintained the *Journal* would show a very large profit. He had himself been largely instrumental in converting the *Journal* from a monthly to a weekly one, and he considered that they had made a valuable property of it. They used the *Journal* for their own notices which they would otherwise have to send by the post, but for which they did not have to pay a penny. If they sent an official notice to THE CHEMIST AND DRUGGIST they must pay for its publication. They were paying a sum of some 6*l.* a week, besides the postage, for issuing all their advertisements and notices, and after distributing five, six, or seven thousand copies. As to the cost of the paper, they thought they had been rather clever in getting the best market for the paper they bought. Mr. Hall had referred to the cost of prosecuting infringements of the Act. It was the fact that they could not avoid a loss on that part of their duty. Law-breakers, of course, put all the difficulties they could in their way. But in a matter of public duty of this kind they must not consider each case from a financial point of view.

Mr. HALL asked if the President would also reply to his question about the agency.

THE PRESIDENT would rather reply on the point privately. Mr. Barnard had put the case for the unqualified managers very fairly, and there were such men as he had mentioned whose cases were worthy of sympathy. But it would be quite contrary to all practice if they were to try to introduce into an Amendment Act of their own a clause affecting the rights of another class, such as those who kept open surgeries. It was not for him to say whether the clause now introduced into the Bill would cover surgeries, but he was sure that if they tried to deal with them they would be crushed out, and their interference would be regarded as a piece of impertinence. It was ridiculous for chemists to assume that medical men had no right to keep open surgeries. Why, in fact, it was the chemists who were the aggressors; they had stolen the business from the old apothecaries, and it was not for them to say now that the latter had no right to practise as of old. He nevertheless believed that if the Bill should pass it would do a great deal towards accomplishing the object aimed at. Mr. Urwick, he presumed, knew quite well that there were no freeholds in that quarter. Their lease for the ground of the new premises was one of eighty years at 60*l.* He should expect that long before that time they would have the opportunity of becoming the freeholders.

Mr. URWICK: Then I think in this matter you have not done yourselves justice. This might have been in the report.

THE PRESIDENT: But it was mentioned last year, when we did not have the pleasure of seeing you. The President went on to say that the warning which Mr. Urwick had given them was valuable, and would have their careful attention. It was criticism of this kind, criticism of general principles, which they desired to have. In reply to Mr. Pickard, he said the ground-rents which they held in the general fund fell in on an average in about twenty-five years. The ground-rents of the benevolent fund had over ninety years to run. And to

show those critics who think we do not know how to invest our money, the President added, I may say that in the matter we manage to change our income at 3 per cent. to one at 4 per cent. Dealing next with Mr. Storey's complaint the President said Professor Dunstan had been suffering a good deal from neuralgia, and had been ordered to take a month's holiday, but it had been thought that by giving his Wednesday's lectures for a time this could be avoided, revision lecture was given instead. Mr. Blar had raised two very important questions: one was whether the curriculum would be of any good, and the other was in reference to the action of the Board of Inland Revenue. With regard to the first point, he was sure that Mr. Bland and agr with him that the best chance for a young man to succeed in pharmacy was that he should be well armed with knowledge which he required for it. He could do Mr. Bland one of the supporters of the curriculum scheme. He was quite sure, too, that he agreed with them to substitute a true apprenticeship for the thing they had at present. This was what they were trying to do. And, lastly, they wished to examine men in the subjects which they had been taught, and not try to catch them in a wide range of questions. He did not like to say much at the Inland Revenue regulations, for he found that when he did say anything about them he had such quantities of letters from his friends in the country that he came a of bagman for Somerset House. He thought he should have an agency. He believed the Board were a little more exacting than formerly. Their object was simply to raise as much money as possible. They had no feeling against chemists or against anyone else. It was true they did Mr. Bland said, practically make the legislative work for the administer. But this was the case with all tax-payers. It was the same in regard to the income-tax and with the fiscal revenue. A large part of their present difficulties had arisen from the time when some of the friends of Birmingham had raised this question. He believed he mentioned this before, but he was not sure if it had been reported. Things were not always reported with due special views. When the representatives of the Association came away from Somerset House they went with some mixed feelings. The general impression was that the work was done fairly on the whole. At the time the clever chairman of the Board had asked Mr. Blar to write into writing his suggestions for greater uniformity in the enforcement of the Act. This had been done and it was from that document that to some extent we were suffering now. In all the cases which had come before him (the President)—and he did not invite any—he had had no trouble with the authorities. They say, "We have no feeling against chemists and druggists, nor against grocers." They will tell you what in their opinion is liable and what is not liable; but if you go to them to argue the matter, they will ask why should you pay while so-and-so is not doing so. Why do they decline to discuss the question. Some say, "Why try to abolish the tax? But it was a question whether it would not do more harm than good by agitating the public." Many years ago there were some complaints published in their journal of the rates of licence duty. In London at that time the licence was 2*l.* a year, in some other towns 1*l.* and in others 5*s.* Somerset House took the 1*l.* and very next year introduced a clause into one of their Bills making the licence duty everywhere 5*s.*, a from that time every Tom, Dick, and Harry had taken to the sale of patent medicines.

The motion for the adoption of the report was then carried unanimously.

Mr. CROSS said, as it was he who had had the honour of introducing the deputation from the Chemists and Druggists' Trade Association to the authorities at Somerset House, he hoped he should be allowed to interfere for a minute. He claimed that the circular which had been the subject of the interview was a very valuable one. It was valuable in that it codified the regulations concerning patent medicines, and could not trace to it any of the misfortunes which had befallen the chemists and druggists, and he believed that if the Chemists and Druggists' Trade Association had done nothing, the result was a complete justification for their existence.

THE PRESIDENT said he had forgotten that Mr. Cross was President of the Association at the time of the interview. He agreed that they had succeeded in codifying the law

that it enabled the Board to work on a wider system. Their directors had been enabled to go to work and get a larger number of penalties.

Mr. J. BROAD (Hornsey Road) was next called upon to move the resolutions of which he had given notice. The first was—

That is necessary, for exposing the constant and growing infringement of the Pharmacy Act, that the Council of this Society shall appoint a person whose duty shall be to obtain information and report to the Registrar all cases of infringement of the Act that he can discover.

He said it would not be necessary to weary the meeting with a long speech or to go into details; but he had felt it necessary to say what could be done in regard to the people who were infringing the Act of which the Council were the custodians. The Council were the prosecuting body in such cases, but they had no machinery. It was impossible for their secretary or the clerks of the Society to do this duty, and the complaints coming from chemists themselves were often very trivial. If they had such an officer as he proposed it would be his duty to investigate such complaints. It might be said that this proceeding would be costly, but he thought they could get from their solicitor a schedule of fees, or they might put up the work to competition. He believed people would be deterred from infringing the Act if they knew such an officer as he had suggested was employed. He had personal objects in view; he believed people in his neighbourhood were infringing the Act, but he did not bother himself about them.

Mr. HOWARD seconded the motion, and narrated at some length the case of a company which had carried on an illegitimate business in his neighbourhood until they failed, the proprietors of which were not known. It would be the duty of such an officer as was proposed to investigate such cases. It was invidious for those in the neighbourhood to complain.

Mr. WICK would ask the Society not to pass this motion. He did not think the Society should be called on to do what this gentleman did not want to do himself. He would like the Society to have an officer always going about asking whom he could lay information against. He was sure the Council would take action in proper cases.

Mr. MAS said they ought to bear in mind that it was the duty of the Society to prevent infringement of the Act. That being so, perhaps the President would say what he thought of this motion.

Mr. ESKIN said the prosecution of offenders was one of the most delicate duties which the Society had to perform. The feeling of the bench in such cases as these was generally that prosecution should not verge into persecution. He thought it would be very prejudicial to the Society if they were to proceed against offenders without previously giving them warning. The Council now performed the duty cast upon them very carefully, and he did not think it at all desirable to employ a common informer, on whose information the Registrar would be obliged to proceed. He submitted the following as an amendment to Mr. Broad's motion:

That the appointment of an informer in cases of infringement of the Pharmacy Act is highly inexpedient, and that absolute discretion is left as heretofore to the Council as to what prosecutions shall be undertaken and what previous warning given.

The President asked whether "the previous question" would be a better amendment, but Mr. Eskin thought it preferable to more definitely record the opinion of the meeting. The President said this was an amendment to both Mr. Broad's resolutions.

On being asked, Mr. BROAD said he preferred that his resolutions should be taken separately.

Mr. L (Hull) said he would move the previous question would ask, How was such an officer to proceed? Suppose he began with Fleet Street, how long would he be before he reached the more distant parts of the country?

The President said they must dispose of one amendment first.

Mr. WICK seconded the amendment of Mr. Eskin.

The President said this was a most delicate matter. The Council were responsible both to the Society and to the

Privy Council. To place a common informer on the road was not authorised by their Act, and was contrary to the spirit of all such legislation. The Incorporated Law Society, which held powers similar to their own, held that they must not move unless they are moved. The Society had all its local secretaries to give them information, and if they went into court a few times with a common informer they would never gain another case. The courts and juries often sympathised with infringers, regarding them as poor men being ground down by a rich corporation. The President gave particulars of a case which had recently been tried, and in which the evidence was indisputable. But the defendant claimed to be tried by a jury, and was acquitted. The Council carried on these proceedings with great care. He hoped the amendment would be accepted.

Mr. BROAD, in reply, said it seemed to him that the amendment was as nearly as it could be a direct negative.

The President said he would take the responsibility of ruling that it was an amendment. He then put it to the meeting, and the amendment was carried by a large majority.

Mr. BROAD then moved his second resolution:—

That this meeting is of opinion that any person reported to the Registrar for infringements of the Pharmacy Act, and whose case has been found clearly one of offence, shall be proceeded against immediately for the penalties provided in the Act, without any caution or warning whatever.

He said he had received numerous letters from town and country members expressing sympathy with this motion, and he himself felt more strongly in regard to this than he did in regard to the previous one. It was the dilatory way in which proceedings were taken in these cases of infringement which led to illegal businesses being established.

The President said he must apologise to Mr. Broad. He had omitted before his speech to put the amendment to his first resolution as a substantive motion. He now put it as a matter of form, and it was carried. Mr. Broad's second resolution was then moved.

Mr. BOTTLE said he would submit that this motion contravened the resolution which had just been passed.

The President said that was his view, and he should rule it out of order.

The registers for the year were then produced, and the following gentlemen were appointed auditors for the ensuing year:—

Hodgkinson, Wm. (Hodgkinsons, Treacher & Clarke).
Hopkin, W. K. (Hopkin & Williams)
Lescher, F. Harwood (Evans, Lescher & Webb).
Stacey, S. L. (Corbyn & Co.)
Watts, Wm. (Battley & Watts)

After the appointment of scrutineers, a vote of thanks to the President and Council was proposed and seconded by Messrs. Urwick and Bell, and carried.

Mr. HOWARD HALL, as a scrutineer, asked for instructions. It had been stated that certain of the candidates were anxious to be present at the scrutiny. Were they entitled to be there?

The President said, in the absence of the lawyer, he did not like to say definitely, but he thought any such claim on the part of a candidate would be a highly improper one. He would consider that only the scrutineers and the President of the Society have the right to be present.

The meeting was then adjourned till 4 P.M. the next day to receive the report of the scrutineers.

THE ADJOURNED GENERAL MEETING.

This meeting was held in the Council Room on Thursday at 4 P.M., Mr. Carteighe, President, in the chair. There was a larger attendance than usual, that is to say, about a score of persons were present, and they were accommodated with seats round the Council table, a position of which some of the younger men present appeared to be particularly proud.

The chairman of the scrutineers, Mr. Thomas Howard Hall, read

THE SCRUTINEERS' REPORT.

This certified that the scrutineers had examined the voting papers and had found the following:—

The chairman of the spur tables were Messrs. C. B. Allen, N. Butt, Walter Hills, John Robbins, Gostling, G. S. Tor, B. H. Paul, and J. Bourdas. After justice had been done to an excellent dinner, during which, by the way, Sir Andrew Clark disappeared with the vascular tissue of the aspargus, grace was sung, and the President proposed the toast of "Her most gracious Majesty the Queen," which was enthusiastically responded to. Then an unusual incident occurred in the intimation of an apology. One of our guests, President, is Mr. Sebardt, of Stockholm, and he has sent a telegram expressing his great regret at being unable to be present. This announcement was received with cheers, and these subsiding,

"PRAY, SILENCE, GENTLEMEN,"

was the toastmaster's cry, "for Mr. President," who had to propose The Royal and other learned societies." In submitting the toast, Mr. Carteighe said that the Society had the privilege of having present that night, he was glad to say not the first time, Professor Stokes, the President of the Royal Society, and with all due respect to him and the body which he represented, he would say that in this toast he included all learned societies, whether learned in medicine, science, or pharmacy. After reciting the names of the principal guests, he went on to say that progress in knowledge was intimately connected with the association of individuals who desired to advance in their calling, and although the Royal Society was the oldest and the first of the learned societies, he might say, in the presence of its President that all such societies were in a sense similar to the mutual improvement associations of the provinces; the objects were, in the first instance, the improvement of the individuals, and finally the advancement of knowledge. It had often been said that the Government of this country should do more than it did in the furtherance of knowledge; but he assented from that notion. One of the greatest things in this country was the devotion with which a number of men had advanced knowledge. In no country was this so well marked. They of the Pharmaceutical Society could appreciate the exertions which were made to advance particular societies. The learned societies were, in many respects like the trade guilds of past times, and this was more especially the case with the Pharmaceutical Societies of Great Britain and of Ireland, which had done a good deal more than what lay in examinations to advance pharmacy and the interests of pharmacists. With the toast he had the pleasure of coupling the name of the President of the oldest and best society in the Kingdom—the Royal Society. Professor Stokes was not a stranger amongst them. When they had the honour of his presence he had not occupied the distinguished position that he did now as a member of Parliament, or rather, he now occupied a different position, for he had condescended to enter Parliament on behalf of science. Applause.) Some of them might think that he (the speaker) did a lot of work, but it was as nothing to what Professor Stokes must accomplish, and they therefore desired to recognise the sacrifice which he had made in order to advance the interests of science in the House of Commons. Professor Stokes, in replying, said that the Royal Society covered all the branches of knowledge, but as time advanced it was thought desirable to have various other societies each devoted to a distinct branch of science. In answer to all on that occasion he would do so by noting two or three topics. The Pharmaceutical Society had a connection with many branches of science, and had a connection with the Royal Society by many ligatures. This, he thought, was the proper word to use, although he was not a physiologist, and after the chairman had assured him that he and the medical knights had beamed upon the Professor Stokes went on to speak of the sciences of pharmacy, more especially of the mysterious sort of chemistry which goes on in the laboratory of our own bodies; of the effects of minute quantities of potent chemical agents, and of the wonderful influence of micro-organisms in production. These he considered grand subjects for study. Pharmacists had to study the chemical agents, and here he saw the connecting links between pharmacy and chemistry and pharmacy and physiology. Just at this point a humorous conversation which had gone on from the commencement of Professor Stokes's speech, evidently embarrassing him greatly, became unbearable, and the President

had to help the toast-master in restoring quiet. The interruption was regrettable, for the speaker had just entered upon the subject in which he is peculiarly proficient, and was telling the company of the great assistance of light in the detection of minute quantities of chemical agents, when he had to conclude his speech in the conventional manner.

The VICE PRESIDENT proposed the next toast, "The Medical Profession," obeying the presidential order by making a short speech. He spoke highly of the profession as one which requires not only knowledge, zeal, and wisdom, but the excellence of all the virtues. It was a proud, noble, and distinguished profession, and they as pharmacists were glad to be associated with it. The profession extended its sympathy and services to rich and poor alike, to prince and peasant, to Mohammedan, Jew, or Christian, to Radical or Conservative; there was no respect of parties or of class. It did not matter to the medical man what his patient might be so long as there was suffering to be alleviated. With the toast he coupled the name of

Sir EDWARD SIEVEKING, who, as Vice-President of the Royal College of Physicians, replied. In taking the place, he said, of one more distinguished than himself, the President of the Royal College of Physicians, he expressed the hope that that institution would grow, fructify, and develop with years. He took a great interest in the Pharmaceutical Society, because it so happened that the year of its foundation, 1841, was the year in which he came into existence professionally, and he was glad to know that the Society was beginning a new life, in the establishment of research laboratories. That was a glorious thing. They were setting an example to the College of Physicians, and the College, he said, intended ere long to build such a place behind that building on the Embankment which was a terror to so many young men. (Laughter.) In that respect, therefore, the Society had its points of contact with the College. It was in stimulation of practical science that all scientific bodies should be united, and he considered it a disgrace to this country that there was not in it the means for development which young scientific men had to go abroad for. Some people had said that this development did not help on to riches, but he repudiated such motives. Although he said that, it must not be supposed that scientific men did not know the value of money. They knew that it was the necessity of life, and there were thousands of young scientific men who repudiated the idea of becoming rich, but wanted only enough money to live, and this sentiment was received with prolonged applause.

The PRESIDENT then rose to propose the next toast—"The Pharmaceutical Society of Ireland." This was the first time, he said, that they had the honour of the presence of the President of the Society. In Mr. Brunker they had a typical Irishman, an educated man and a cultured pharmacist, who in addition to these qualifications possessed in a high degree the virtues of patience with his Council and a little management in directing them. I find it a little difficult with my Council sometimes, continued the speaker—not that they will not go the way I want them, but they will not go straight. Mr. Brunker has to do in Ireland with his team pretty much what I have to. He has to analyse the feelings, get to know the sympathies and the strength of his team; and my experience is that once that is done the team goes the President's way, and the President's way is the right way. The speaker then proceeded to congratulate Mr. Brunker on his conduct of the Irish Society's affairs. That conduct showed what a resolute will and an educated man could do. After referring to the condition of pharmacy in Ireland before the passing of the Pharmacy Act and since, he spoke of the weaknesses of that Act as well as its good points, and wished Mr. Brunker god-speed in his endeavour to get the Act amended so as to remove the anomalies which exist.

Mr. BRUNKER, in replying, said that the society which he represented was a small one in its influence, and had to face many difficulties. It had been set afloat with an imperfect Act and without the sinews of war. The Act was a Government Act, and like many such Acts it was an imperfect one. They had been trying for years to get it amended, and had at last initiated a Bill which, if it became law, would solve many of their difficulties. The Bill contained provisions which would be beneficial to Great Britain as well as to Ireland by establishing a legislative precedent.

The great advantage which Irish pharmacists enjoyed was that pure pharmacy existed better in Ireland than in Great Britain. Pharmacist and physician there went side by side, and there was no jealousy on that account. As long as that existed their life would be a happy one. (Applause.)

"Pray, gentlemen, charge your glasses.

"A BUMPER TOAST, GENTLEMEN.

"The Pharmaceutical Society of Great Britain."

The stentorian voice of the old toastmaster resounded through the hall, and Sir Dyce Duckworth, taking the cue, said that to do the toast justice he would first have to indite a prescription, which would be:—

Recipe:

- One-third part of the eloquence of the President of the Royal Society;
- One-half part of the eloquence of Mr. Carteighe;
- One-third part of Sir E. Sieveking's eloquence.

Make a toast.

It would need that to do justice to the Pharmaceutical Society of Great Britain. He was glad to say that the Society was doing good in all parts of the country. It was turning out good men in every town and village. It was doing good work for pharmacy, for the medical profession, and for the public at large. It had struck him while he sat there pondering on the good that the Society was doing in Great Britain, had it anything to do with pharmacy in the colonies? Might it not take into consideration something for the colonies? He thought that it might found Pharmaceutical Societies and establish examinations in the colonies, so that the Society might become an imperial one. (Applause.) In coupling Mr. Carteighe's name with the toast, he said he knew little of him as President of the Society, and he didn't know how he conducted its examinations (laughter); but he knew him in several capacities, and if he showed half the energy in conducting the Society's affairs as he showed in other departments of life, he would say that he was the best man for the chair, and they all knew how risky a thing it was to swap horses in crossing the stream. He therefore gave the toast coupled with the name of Michael Carteighe—"a good man, a good President, and above all a very good fellow."

The toast was warmly responded to, a half-hearted attempt being made to give it musical honours.

The PRESIDENT, in replying, said that nothing could go more to his heart than to know that the work of the Society was recognised by the members of the various learned societies who were present that night. During the existence of the Society there had been giant workers in it, Mr. William Allen, Mr. Jacob Bell, and Mr. Sandford, to wit, and it had been his duty to follow these men and to do all that he could for the advancement of pharmacy. He then recited the various efforts which had been made from time to time to get proper enactments for the regulation of pharmacy, and more especially dwelt upon the Bill now before Parliament, and the provision contained therein for the regulation of the preliminary training of pharmaceutical students. The object of the curriculum scheme of the Society was to place before the public men who were competent in all branches of their calling, and men who would do credit to all the compliments which were heaped upon them that night. He hoped that the day would come when all persons engaged in the compounding of medicines would be qualified in the highest sense of the term, and to attain that object he asked Sir Dyce Duckworth and Sir E. Sieveking for their assistance in passing the Bill now before Parliament.

Following on this the PRESIDENT proposed "Our Guests," which was responded to by Sir A. B. GARROD, who regarded himself, being an honorary member of the Society, as one of themselves, and took the opportunity to thank the distinguished visitors for their presence that night. There were few societies, he thought, which could have so many distinguished visitors present in any one evening.

With this sentiment ringing in their ears the company adjourned to the coffee-room, and by eleven o'clock had begun another year's interval ere the next of these pleasant gatherings.

During the evening Mr. Edward Plater's glee union gave a selection of vocal music.

TRADE-MARKS APPLIED FOR.

THE *Trade Marks Journal* publishes the following notice: "Any person who has good grounds for objection to the registration of any of the following marks may, within two months of the date of the notice in duplicate at the Patent Office, in the form 'J' in the second schedule to the Trade Marks Rules, 1883, of opposition to such registration." The address of the Patent Office is Southampton Buildings, London, W.C.

From the "*Trade Marks Journal*," May 16, 1888.

"METCALFE'S SODAMINT DROPLETS," and other wording in white letters on black label; for a medicinal preparation. By Metcalfe, pharmaceutical chemist, Hull. 68,227.

"D. WEST'S YELLOW OILS"; for oils used as medicine. Eliza Gunson, trading as D. West, herbist, Chancery Street, Market Rasen. 66,198.

"DR. RICHTER'S STOMACHAL"; for a pharmaceutical compound. By Dr. F. A. Richter, trading as F. Richter & Co., 1 Railway Place, Fenchurch Street. 7,547.

"DAVID MASON'S SPARKELET," and other wording, on label for an essence for making a non-intoxicating beverage. By D. Mason, chemist, Coventry. 68,726.

"GILLETT'S PERUVIAN FLUID," and other wording, on label for a fluid for the hair. By J. Gillett, 10 Mill Street, Southport. 68,793.

"PROFESSOR TUSON'S SHEEP DIP," the latter words in figure in centre; for a sheep wash or dip. By J. T. Jellicott and G. Glasier, trading as Jekyll, Glasier & Co., Lincoln. 69,106.

"CHESHIRE SOAP COMPANY'S SOAP"; for common and refined soaps, &c. By Hazelhurst & Sons, trading as Cheshire Soap Company, Runcorn. 70,539.

Figure of a sword-fish in centre of a design, with name of depositor; for aerated waters. By F. Carl, Hornsea. 70,551.

"DR. HAGEDORN'S FLAT SURGICAL NEEDLES and "HAGEDORN'S IMPROVED SURGICAL NEEDLES"; for flat surgical needles. By Krohne & Sesemann, 8, 10, 12, Manchester Square, W. 71,081-2.

"WALDEN'S EXTRACT OF RENNET," and other wording; extract of rennet. By R. W. Walden, 6, Elizabeth Street, Eaton Square, S.W. 71,314.

"ELSLEY'S LILY PLATE POWDER" on label for polishing powder. By G. Elsley, Maple Road, Peterborough. 71,606.

"MRS. STIDDER'S SANITARY SYNTHEDINE HAIR PREPARATION for a preparation for the hair. By Amelia A. Stidder, Birch House, Loughborough Road, Brixton, W. 71,614.

"WYLEYS' LOZENGE-PELLETS" (in script); for medicinal substances. By Wyleys & Co., Coventry. 72,294.

"PATON'S FRUIT SALTS"; for a chemical preparation for medicinal purposes. By H. Paton & Son, 1, Piccadilly, Manchester. 72,349.

"VRIL"; for a patent medicine. By W. Macdonald, 8 Highlever Road, St. Quintin Avenue, Northampton, W. 72,613.

"ARGOLINE"; for preparation for the hair, &c. By Kennedy Company (Limited), 112 Southampton Row, W.C. 72,655.

"EASY & Co." (signature); for polishing-paste. By Easy & Co., Hanley. 72,732.

"WALKER'S CHINESE PILLS," on label; for pills. By A. Pratt, pharmaceutical chemist, Manor Square, Oxford. 72,989.

"HICKS'S INSTANTANEOUS THERMOMETER"; for clinical thermometers. By J. J. Hicks, 8-10 Hatton Garden, E. 73,011.

"THE OTTOMAN"; for toilet soaps. By the Victoria Company (Limited), 105 Upper Thames Street, E. 73,095.

RECENT PRACTICAL RESEARCHES, DISCOVERIES, AND IMPROVEMENTS IN PHARMACY.

By A. C. STARK.

Being the way for which the Burroughs-Wellcome Prize of £1,000 and Silver Medal has been awarded by the Council of the Chemists' Assistants' Association.

THE advance in all departments of knowledge which the past year has witnessed has been worthily sustained by science in general and those branches of it of pharmacy in particular. Pharmacy is the practical application of facts and principles drawn from so many departments of scientific knowledge that there are few sciences which are devoid of interest to the modern pharmacist. To epitomise all the work done in this connection would be a work of great labour and attended with too numerous results for the purpose of this paper. I propose, therefore, to describe and criticise only the principal results of pharmaceutical interest during 1887.

Alkaloids hitherto regarded as of more or less unimpeachable purity have had that quality called in question, compounds and preparations of time-honoured standing have been shown to be valueless or imperfect, and their abolition or improvement suggested. The year, too, has been prolific in new remedies, many already of established value, and some progress has been made in the cultivation of those cardinal pharmaceutical virtues, uniformity, exactness, and elegance.

My subject naturally divides itself into three heads, suggested by the title of this paper, and these I propose to deal with serially.

RESEARCHES.

COCAINE IMPURITIES.

Under the first of these heads must be placed the important investigation in connection with cocaine. Since the discovery of the marvellous properties of this alkaloid it has been demanded and produced in relatively enormous quantities, and the question of its purity is therefore one of paramount importance. It was found that cocaine, being decomposed by water (in this way resembling atropine), a salt of the alkaloid was more adapted for use than the pure hydrochloride was chosen as most suitable. It is interesting to compare the dirty granular, or amorphous, and more or less odoriferous, preparation at first produced with the brilliant white sparkling crystals now in common use. But it is apparently perfect preparation frequently

isolated from the leaves of *Erythroxylon coca*, there is found in the mother liquor a varying quantity of the body known as amorphous cocaine. It is a sticky, viscid substance, totally uncrystallisable, but forming crystallisable salts with acids, and hence often contains cocaine hydrochloride. It was first thought to be cocaine, but it was reserved for Dr. Stockman to suggest the probable nature of the substance. From a consideration of its chemical and physiological properties, this investigator was led to the conclusion that it was a cocaine in hygrine, a liquid alkaloid found by Wöhler in coca leaves, and much resembling nicotine in properties. It is extremely difficult to separate cocaine hydrochloride from the salts of this body, as the two are precisely the same, and, as the existence of it is not for some time suspected, probably few commercial hydrochloride of cocaine were free from it. There is a prevalent impression that the earlier specimens of the salt were purer than those at present produced. I do not think this theory is justified by facts. It must be remembered that the use of cocaine internally is of recent date. On its first introduction it was as a local anæsthetic only, and hence impurity was so obvious. Against Stockman's view has been urged the volatile nature of the impurity (hygrine being a volatile base), and also that samples of cocaine free from hygrine still produce the extreme irritation said to be due to the existence of hygrine (as described by Wöhler), indeed, denied, and, by the analysis and reaction

of the platinum salt of the body said to be hygrine, Howard was unable to confirm Wöhler's account of it.

An explanation which has been suggested of these conflicting statements is that during the manufacture of cocaine a portion of the alkaloid becomes decomposed, the dubious body known as hygrine being formed and dissolving some of the cocaine, as suggested by Stockman. (That the substance does contain cocaine is proved by its numbing action on the tongue, and by its often furnishing crystals of the alkaloid.)

I think this explanation is justified by the fact that cocaine is an easily decomposable alkaloid, and also that, if an alkaline ethereal extract of the leaves be shaken with dilute HCl, the acid solution at first shows no fluorescence, but after standing some time develops the blue fluorescence said to be characteristic of the so-called hygrine.

One thing is certain—that cocaine hydrochloride, even carefully prepared, is likely to contain more or less of an extremely irritating and poisonous impurity. Pharmacists should therefore ascertain the purity of their salt, by its freedom from odour and colour, and by dissolving 1 grain in 5ij. of water, and adding two drops of NH_4HO . If the sides and bottom of the vessel be well rubbed with a glass rod, well-marked striae will appear where the rod has touched, followed by the formation of a flocculent precipitate, leaving the liquid bright and clear in the case of a pure salt. If amorphous cocaine be present no striae or precipitate will be formed, but the liquid will remain milky and present an oily surface. Some samples I have examined by this method have yielded more or less distinct evidence of the presence of amorphous cocaine. In doubtful cases the salt may be purified by the method suggested by Mr. Williams, namely, by dissolving the salt in the smallest quantity possible of perfectly anhydrous alcohol (sp. gr. .795), adding this solution to about six times the volume of pure anhydrous ether, collecting the crystals which separate, and drying. It is true that the hydrochlorides of the impurity (or impurities) are also insoluble in ether, but in practice it will be found that the cocaine salt separates much more quickly than the impurity, and hence may be collected. For the assay of a sample of cocaine hydrochloride the pure alkaloid may be precipitated by ammonia, the calculated percentage being 89.25, and the average yield about 82 per cent.

QUININE IMPURITIES.

Analogous to the investigation of the impurities of cocaine, and perhaps of equal importance, is the work done in connection with the purity of commercial sulphate of quinine. In addition to the impurity always present to a more or less extent of cinchonidine sulphate (to which I shall refer later on), Hesse indicated the existence of two new alkaloids—hydroquinine, present to the extent of 4 per cent., and also varying quantities of hydrocinchonidine. Both these bodies have the reaction of quinine (with which they are isologous). The chromate of hydroquinine is, however, copiously soluble in chloroform, which the quinine chromate is not.

From this, and the assertion made by Dr. de Vrij, that all commercial samples of quinine sulphate contain at least 5 per cent. of the cinchonidine salt, arose a series of discussions and investigations.

Perhaps the most useful product of these was the test proposed by Hesse for the detection and estimation of cinchonidine sulphate in quinine sulphate. One grain of the sample dried at 100°C , is shaken with 20 c.c. H_2O at 60°C , cooled and filtered. Place 5 c.c. of the filtered solution in a narrow test-tube with 5 c.c. of ether and 5 drops of NH_3 solution, close and shake the tube, when the ethereal stratum should not develop crystals on standing. It will be seen that this test is a modification of the one adopted in the B.P., and it is gratifying to notice that, in this instance at least, our Pharmacopœia was distinctly in advance of its foreign contemporaries; the improvement consists in the absence of acid, and in assaying the evaporation of the mother liquors. By the application of this process successively to a weighed quantity of quinine sulphate, the whole of the cinchonidine sulphate may be estimated, the mother liquors in each operation being concentrated before the addition of the ether. If this precaution be not taken, a compound containing one molecule of quinine with two of cinchonidine may be obtained, which would, of course, prejudice the estimation. Samples examined by the above method yielded from 4.64 to 9.34 per cent. of cinchonidine sulphate. Among other tests proposed

at this time may be mentioned those of De Vrij (the bisulphate), Kremel (titration), and Schafer (oxalate), but those depending upon recrystallisation give decidedly best results. The well-known Kerner's test also maintained its ground, although, as shown by the Paris Commission appointed to consider the subject, the operation should be conducted at a temperature of 60° C.

The most ambitious attempt, however, to remodel the system of assaying impurity in quinine sulphate was made by Dr. de Vrij. His system was as follows:—Dissolve 5 grams of the salt in 500 c.c. hot water, and to this add 1.2 c.c. of neutral K_2CrO_4 , and leave to cool for twelve hours; collect, wash, dry, and weigh. The calculation of the amount of pure quinine present is made from the formula $(C_{20}H_{24}N_2O_2)_2CrO_4 \cdot H_2O$, and to this must be added for every 100 c.c. fresh water used and mother liquor obtained a further quantity of .05 gramme, as the quinine chromate is slightly soluble in water.

This process, however admirable in its simplicity, is open to many objections. The quinine chromate is unstable above 30° C., and is also hygroscopic, rapidly absorbing water again when dried. Moreover, the correction for solubility amounts to about 5 per cent., as does also the re-absorbed H_2O . This, therefore, exactly defeats the object in view, since 5 per cent. is the limit of impurity allowed. Besides, it was shown by Hesse that a varying quantity of cinchonidine chromate also separates out with the quinine salt, and that chromate of hydroquinine, even up to 8 per cent., is also removed with the quinine chromate.

The inference which, I think, pharmacists should draw from these investigations is that it is best to draw the line between pedantic objections to slight impurity and loose toleration of excess of contamination. When it is remembered that the impurities occurring in quinine sulphate, although perhaps of less value, have still the same therapeutic action as quinine, it will be found better to take a common-sense view of the question, and, whilst rigorously testing their quinine and insisting on the observance of the limit of maximum impurity, to tolerate it at least up to 5 per cent. Such quinines as those manufactured in India, containing from 20 to 40 per cent. of cinchonidine, are obviously quite inadmissible, but samples of absolute purity are neither necessary nor desirable.

ESTIMATION OF CAFFEINE.

Although not, perhaps, strictly a branch of pharmacy proper, in view of the increased employment of caffeine in medicine, it is decidedly interesting to notice the important addition which has been made to what may be called dietetic science by the researches of Messrs. Paul and Cownley on the percentage of caffeine in tea and coffee. It was found that the percentage of caffeine in coffee was extraordinarily constant, ranging from 1.1 to 1.28 per cent. in the green undried berry, and 1.3 per cent. in roasted coffee. A remarkable paradox is here pointed out, namely, that the roasted coffee frequently contains a higher percentage of caffeine than the green berry. When we consider that caffeine is a very volatile alkaloid, this appears almost incredible; but it may, no doubt, be explained by the fact that coffee contains a large proportion of moisture (from 6.2 to 10.10 per cent.). Thus, although some caffeine (.03 per cent.) is undoubtedly lost in roasting, this loss is more than compensated for by the loss of weight in the original substance.

The time-honoured practice of mixing coffee with chicory was also condemned, and with reason, since samples of mixtures examined contained from 25 to as much as 93 per cent. of chicory. The components of chicory are so essentially different from those of coffee that it is quite time the admixture of the two was prohibited. The alleged reason of its being retained is that the mixture of the two can be retailed at a much lower price than pure coffee—a fact which, taking the above into consideration, is of dubious advantage. By these researches of Messrs. Paul and Cownley the method of assay in coffee mixtures has been revolutionised, since it is only necessary to estimate the caffeine in a sample, and from this the amount of pure coffee can be judged.

Analogous results were not obtained in the examination of tea, since the quantity of caffeine therein varies considerably, from 3.22 to 4.66 per cent. Moreover, the market value of a tea appears to be in no way dependent upon the percentage of caffeine it contains, since in some cases the best and cheap-

est qualities were found to contain the same percentage of alkaloid. It is not at all improbable that the value of tea as a beverage depends upon other constituents besides the caffeine. The volatile oil it undoubtedly contains has not, I think, received the attention it deserves.

THE OFFICIAL SUCCI.

There are few preparations of more dubious quality than the official succi. Many of them decompose rapidly, deposit copiously, and, worst of all, are of very fluctuating strength. This fact was well established by the researches of Arthur Smith, in which the alkaloid in some samples of allanion juice was found to vary from a trace only to .05 per cent., in the case of conium from .284 to .088 per cent., in digitalis 1.075 per cent., and the remainder showed a like unreliability. It is especially useful to notice the percentage of alkaloid in conium juice, since the succus has been recommended as the most reliable preparation of this drug.

STANDARDISATION—BELLADONNA PREPARATIONS.

The ideal state of pharmacy will not, I believe, be reached until all drugs are of exact and definite strength, and it is quite time that such obsolete and indefinite preparations as these should be abolished or amended. A simple solution of the natural salt of the alkaloid would, no doubt, in all cases have been infinitely superior to those indefinite preparations of the official succi. Much of the conflicting testimony of the action of drugs has arisen from the vagueness and indefiniteness of such preparations as these. With the standardisation of remedies a revolution of therapeutic science will arise, and, although idiosyncrasy must always to a certain extent baffle the physician, still we (as pharmacists) shall have done all that skill can do in furnishing the physician with proved weapons in his warfare against disease.

It has been objected in opposition to this view that we do not yet know what the physiologically active principle in a drug is, and that, therefore, such theories are premature. This is, perhaps, quite true; but it seems to me that the object of standardisation is not to obtain a more perfect preparation, but one that will produce a more definite result. In a drug containing several active principles, I assure that the one in excess will usually determine its action. I then will have a preparation always containing a certain principle in fixed quantity, we may expect generally a definite result from its administration. The mere tyro in medicine knows that certain drugs are "good for" certain complaints, but the aim of the modern physician is rather to counteract the physiological change of disease by the known physiological action of drugs; and in this process standardisation of remedies plays an indispensable part. The most valuable and interesting work done in this connection has been the investigation and researches of Professor Dunstan and Mr. Ransom in belladonna. Their first conclusion is that the root should be uniformly employed in the manufacture of the preparations of this drug. The value is great and fairly constant, the supply is abundant, and the amount of inert material (albumen, colouring matter, extractive, &c.) is lower than in any other part of the plant.

In their researches the authors showed the fallacy of depending upon the amount of matter vaguely termed "extractive" in a tincture as a criterion of its value, some tinctures yielding large quantities of extractive and others small quantities of active principle. It would, no doubt, be an immense boon to medicine if all extracts could be prepared dry. Such preparations as the abstracts of the S.P. (which are standardised and reliable) have always appeared to me to be the epitomes of a perfect preparation of a vegetable drug. The one objection to their form is their possibly hygroscopic nature; but this can be combated by proper means. In any case they are, I think, preferable to substances which vary from the consistence of treacle to that of oil, which are usually of extremely indefinite strength.

Owing, however, to the decomposition of many alkaloids by heat, this ideal extract is at present, in many cases, incompatible with activity; but belladonna lends itself well to treatment, since the alkaloids are not decomposed at a temperature of 100° C. Therefore, having prepared a liquid extract of the root, the amount of alkaloid in 50 c.c. is estimated, and from this the proportion of alkaloid to the whole is determined. The liquid extract is then evaporated to dryness, and a sufficient quantity of sugar of milk added to make the finished powder.

cent. of alkaloid. We have then an extract of belladonna perfect as our present knowledge will permit. It is of finite strength, devoid of useless extractive (and therefore stable), easy to manipulate, and not inelegant in appearance. Its one objection may be its hygroscopic nature; but from any point of view it is a very distinct improvement upon its predecessors. From this extract the other preparations of belladonna are made, which then are all of definite strength. It is, of course, obvious that this process is not in all its details to all extracts, nor is it desirable that it should be, since some depend for their usefulness upon a variety of more or less undetermined substances. But in the case of drugs whose action is specific it is usually applicable, and further attempts should be made in this direction.

GELSEMIUM ALKALOIDS.

Among new alkaloids may be mentioned the discovery of a second principle in the root of *Gelsemium nitidum* by F. A. Thompson. This alkaloid, which was not obtained sufficiently pure for analysis, appears to be the tetanising principle (or suspected) of the plant. It is distinguished from gelsemin, the old alkaloid, by its colour reaction with H_2SO_4 and Mg , these reagents with the old alkaloid giving a cherry-colour changing slowly to olive green, and with the new gelsemine a deep purple changing slowly to bluish purple, the blue predominating.

CALAMINE VARIETIES.

There are few things more bewildering, and often inconvenient than the many varieties of calamine in commerce, and this position is somewhat complicated by the urgent recommendation by each manufacturer of his own particular kind. Passing through all colours from pink and red to grey and white, its composition seems correspondingly various. It is a question whether the employment of pure carbonate of zinc in place would not be attended with equally beneficial results on some respect is due, perhaps, to time-honoured prejudice. Moreover, it has been said, "in a multitude of councils is wisdom," and perhaps the remark applies to the composition of this remedy. From a paper by A. R. Bennet on the subject, it appears that some samples are devoid of zinc. The qualities of a good calamine, I take it, are its amorphous condition, freedom from silica, and presence of zinc. These conditions seem best fulfilled by the grey varieties.

DISCOVERIES.

Among the developments of scientific progress there is, perhaps, none more striking than the attempts which are daily made to supersede nature's products in the treatment of disease and the nourishment of the human body. Our ancestors were content with mineral elements and their compounds with preparations of plants and their alkaloids, for the pharmacopœia. Of the secrets of that wonderful operation called digestion they knew little or nothing, and consequently were unable to perform it artificially and thus provide the exhausted organs with material ready for immediate assimilation. But we have changed all that. Not only have we manufactured artificially the identical active principles of plants, but we have also produced complex organic remedies which have never before existed. Not content with indicating the nature of digestion, and the most favourable conditions for its perfect development, we have partly performed it artificially, and, by the administration of those artificial preparations termed peptonoids, have prolonged many a life which, under the old régime, would have been prematurely doomed.

Of the artificial remedies there are none more remarkable than the therapeutic products of that body of inexhaustible fertility, coal-tar. On the introduction of these remedies great expectations were formed as to their future utility, and it is no perhaps too much to say that, had those expectations been fully realised, the art of medicine with regard to its remedies might have been reorganised. For it was thought that, by the introduction of different radicles into certain of the carbon compounds, almost any variation of therapeutic effect could be produced by the administration of them, and hence it would only be necessary for the physician to indicate the true theoretical composition of the compound required, and the scientific chemist could produce any quantity of a remedy of definite and exact com-

position with a fixed and reliable medicinal action. Unfortunately, the application of these theories is defeated by the very nature of the compounds employed. The uniformity and exactness of their composition is in many cases more than frustrated by their complex nature. On introduction into the human system many of them too rapidly decompose into other bodies, which exert a more or less injurious or undesirable action.

There are, however, some which do not appear to be open to this objection, and which will no doubt form useful additions to our list of remedial agents. It would be an endless labour, and a comparatively useless one, to describe those which, in English pharmacy at least, have had such an ephemeral existence. Their sudden decline was only equalled by their rapid rise. Such are "Antithermin," "Urethan," "Methylal," "Acetylaminophenol," "Aseptol," "Betol," "Thallin," "Kairin," and the organo-metallic compounds "Phenol Mercury," &c. Some of these are still dragging on a career of doubtful utility; but the days of their existence are, I believe, numbered.

SALOL, ANTIPYRIN, ANTIFEBRIN.

There are three, however, which seem to be tolerably well established. They are "Salol," "Antipyrin," and "Antifebrin." The first, introduced as an antirheumatic—a use which its composition, that of salicyl-phenyl-ether, indicates—is now employed as a substitute for iodoform. It is white crystalline solid, with pleasant, aromatic smell. Its behaviour when warmed with water (in which it is insoluble) is remarkable. It separates at the bottom of the tube in an oily globule, but, on adding more water and agitating, it resumes its normal appearance. Fused with potash treated with water, filtered, and neutralised, it gives with F_2Cl_6 the characteristic purple of salicylates.

Antipyrin is at present the most popular of these artificial remedies. It occurs in crystalline laminae soluble in water, and giving with F_2Cl_6 a blood-red colour, thereby distinguishing itself from antifebrin, which gives no reaction with that reagent. The composition of antipyrin is that of dimethyloxy-chinizin. It is now largely used as an antipyretic and a remedy for sea-sickness, and its remedial capacity seems by no means exhausted, at least by its promoters.

Antifebrin, from various considerations, is entitled to far more attention than it receives. It is extremely simple to prepare, consequently low in price, and its action appears to be quite equal to that of the more popular artificial febrifuges. From its composition, that of acetanilide, it is likely to contain traces of aniline, which exerts a toxic action. It should, therefore, be tested for this body by rubbing with excess water, and adding a little hypobromide of soda, when an orange-red precipitate is produced if aniline be present. A sample I have examined by this test yielded no evidence of the presence of aniline. Antifebrin somewhat resembles antipyrin in appearance, but may be distinguished by its insolubility in cold water, and by the iron test before mentioned. The part which will be played in the medicine of the future by such compounds as these it is impossible at present to anticipate. If their value were fully established, the advantages which would accrue to medicine and pharmacy by their use is almost incalculable; but the present reflection we draw as pharmacists from a consideration of the subject is the importance of a sound theoretical and practical knowledge of organic chemistry.

SACCHARIN.

It is pleasant to turn from these compounds of more or less doubtful value to one of the same class, and of enormous utility—saccharin. From a chemical point of view, saccharin is peculiarly interesting because of the difficulties overcome in its manufacture. Discovered, as it were, by accident, the greatest credit is due to its inventor for the elaboration of its process of manufacture. It is, I believe, the first instance of such a complex organic substance being produced in such a quantity and at such a price as to allow of its general use, and it may as such be regarded as a legitimate triumph of applied science. Its composition is that of benzoyl sulphonic amide, its formula being $C_6H_5\langle\begin{smallmatrix} CO_2 \\ SO_2 \end{smallmatrix}\rangle NH$. It is true that such a formula is comparatively simple; but when the process for its produc-

tion is considered, it will be seen that in producing large quantities the practical difficulties to be overcome are considerable. The part that saccharin will play in the pharmacy of the future has yet to be demonstrated. I do not think that its value at present is sufficiently appreciated or understood. The great aim of medicine in its pharmaceutical aspects is to produce remedies as elegant as efficacy will permit, and as free as possible from useless material. Obviously a flavouring agent which is in itself quite inert, and which is of such great strength, must be a valuable ally. By its use in place of sugar in many preparations, greater stability, improved appearance, better flavour, and much greater portability and concentration can be obtained. The objection at first raised to its use on account of its varied appearance has, by more perfect manufacture, been overcome, and the later samples are all that can be desired.

STROPHANTHUS.

To turn from the consideration of a compound the result of the labour of a scientific modern chemist to a remedy suggested, as it were, by East African savages, is somewhat of a descent; but it is only one instance of many valuable remedies obtained from such unpromising materials. I speak, of course, of strophanthus, a remedy introduced by Dr. Fraser, and suggested by the Kombé arrow-poison of African aborigines. This is the second remedy from the same source, the other being curarine, from the Woorali arrow-poison.

Strophanthus seeds were found by Fraser to contain a little glucoside, which acts as a muscle poison. Two kinds of seeds occur in commerce, namely, those from *S. Kombé* and *S. Hispidus*; but the former appears to be the kind the use of which is indicated. From it, after extraction of the oil by ether, a 1 in 20 tincture is prepared, the maximum dose of which is 20 m. The presence of the glucoside strophantin—which has not been made an article of commerce, nor has its composition been at all established—may be proved by the test proposed by Helbing, namely, by placing the substance in a white plate and adding a drop of F_2Cl_6 ; then on adding a drop or two of H_2SO_4 , and stirring, a reddish-brown colouration is produced, slowly fading to an olive green. I have found this reaction answer well with the tincture, but have been unable to obtain it in a more dilute solution.

The value of strophanthus in the treatment of heart diseases is by no means well established. As a rival to digitalis its popularity is decidedly on the wane, and the general opinion of medical men appears to be that, like so many vaunted remedies, it will die a natural death. As pharmacists we may congratulate ourselves on the enterprising way in which our part of the investigations was carried out, and so can afford to regard its rise or fall with tolerable equanimity.

LANOLIN.

An innovation whose claims and utility are based upon much more solid evidence than the above is lanolin.

This isomer of cholesterol was first suggested as a basis for ointments, &c., by Professor Liebreich, and has since been produced in large quantities by the saponification and purification of the fatty acids of wool grease. Its remarkable properties of absorbing water, to the extent of more than its own weight, and the facility with which it is absorbed by the skin, render it peculiarly suitable for the application of remedies in an unguent form, and it is perhaps destined to supersede many of the bases in present use. Therapeutists are by no means agreed as to the value of absorption of remedies by the skin. It is a question whether the action of an ointment should be purely local or exert such a general action as absorption gives. From researches which he has made Dr. Guttman denies the superiority of lanolin in promoting absorption of remedies by the skin, and, indeed, affirms its inferiority in this respect to lard. This view is opposed to prevalent ideas in deference to which lanolin ointment containing powerful remedies should be made of half the usual strength.

The chief use of lanolin, I think, is as an emollient and lubricant. It is well adapted for such articles as cold cream, pomades, &c., and its real use as a medicinal adjunct has yet to be fully proved. It is, moreover, liable to oxidation, and is not so elegant or so easily manipulated as vaseline, and, if

the value of absorption be disproved, will certainly not displace this useful medium.

As so many qualities of "lanolin" have appeared in the market, the following tests are suggested, in addition to such physical tests as its whiteness, consistency and smell:—1. It should not evolve NH_3 when heated with caustic soda. 2. When heated with ten times its bulk of water it should separate as clear oil; the water should not froth, and should be free from glycerine. 3. It should readily absorb at least 70 per cent. of H_2O . Such samples of recent make as I have had time to examine by these tests have yielded negative results.

DIGESTIVE FERMENTS.

The subject of the digestive ferments is one that is usually considered as quite beyond the ordinary pharmacist's scope. When little or nothing was known of these bodies such ignorance was natural and not to be deplored. But with the progress of physiological science a great demand has arisen for these substances. From scientific curiosities they have been elevated to the rank of remedies, and as such I like to see their preparation belongs to the skilled pharmacist. In most cases it is not a process which involves much, any, physiological knowledge, and the manipulative skill required is such as would ordinarily be looked for in the modern pharmacist. The enormous amount of material which must be often daily destroyed as useless should render it in skilled hands a profitable branch of pharmacy. Moreover, the demand for peptonised and peptonising agents is fast increasing, and I think the supply should be more general than at present. The digestive ferments of interest to the pharmacist may be roughly classed under two heads:

1. Those most active in an acid medium:—Pepsin, at the milk-curdling principle of rennet.

2. Those most active in an alkaline medium:—Trypsin, ptyalin, and the milk-curdling principle of the pancreas.

None of these have been isolated in a state of complete purity, but by the action of solvents (as glycerine) the mucous membrane of stomachs an active fluid preparation can be made; and also by precipitating the aqueous extract of the minced pancreas with strong alcohol an exceedingly fine powder is obtained, containing both the amylolytic and proteolytic powers of the pancreas.

It is important that the activity of all these preparations be tested by their digestive action on starch or white egg, since ferments are not always present in a perfect condition in all crude material. In view of the undoubted value of peptonising agents and the increased employment of peptones, I think this is a branch of pharmacy which should be more studied than at present, and I hope it will not be long before these are the ordinary manufactures of every skilled pharmacist.

GUM SUBSTITUTE.

An extremely useful and ingenious substitute for gum acacia has been proposed by Mr. Boa. In view of the increased price and difficulty in obtaining good gum acacia, and the cheapness and practically unlimited supply of the proposed substitute, the suggestion is one of great value. Mr. Boa proposed to employ a mucilage from Irish moss in place of acacia mucilage. The analysis of the moss shows a percentage of 55.4 of mucilage, and an examination of this constituent indicates that it is really superior to ordinary mucilage for preparing emulsions, although not perhaps so suitable for suspending powders—a difficulty which can be overcome by careful manipulation.

The mucilage is easily prepared by digesting the moss in boiling water and filtering through absorbent cotton. By this method, if a strength of $\frac{1}{4}$ oz. of alga to 24 oz. of water be employed, a mucilage is obtained of about the viscosity of acacia mucilage. Since the employment of acacia is due to its physical rather than to its medicinal qualities, it is obvious that a substitute of equal utility and low price is an undoubted advantage, and, although it does not at present seem to have met with much appreciation, still I think it is a valuable addition to pharmaceutical knowledge.

IMPROVEMENTS.

This head naturally includes so much that I have passed over the first two that it is difficult to describe anything that is nothing but a pharmaceutical improvement.

do not think the past year has proved very fertile department. The valuable work that has been done in connection with researches and discoveries has by no means met its parallel in purely pharmaceutical improvement.

It is not much to be wondered at when we consider that we have no book on English pharmacy which is at all of the high position it occupies and is entitled to. The method of teaching pharmacy at most of our schools is the demonstration of the processes of the Pharmacopœia. However suitable the British Pharmacopœia may be for its purpose, it is by no means to be regarded as a work on pharmacy. I have always held that in teaching a technical subject the acquisition of general principles should precede the practical application. We have now at least English pharmacists who are competent to produce a work which should occupy the same position with us, say, that Remington's splendid work does with the Americans. The appearance of such a book will do much to stimulate the rising generation to the technical improvement of their art. One of the most useful things in English pharmacy—because one of the things we are most deficient in—is the manufacture of preparations of a more elegant, exact, and portable nature. I might instance, to illustrate, the introduction of compressed tablets, originally an English idea, but certainly improved by our Transatlantic cousins. Compare the elegant, exact, and portable compressed tablet with the cumbersome trochisci potas. chlor. A considerable prejudice exists among the English faculty against these kinds of innovation, but I take it that this is typical of the form that the pharmacy of the future is going to take, and it behoves us to keep pace with the time and reap the honours and rewards of the improvements. It is gratifying to notice, therefore, that something is being done in this direction. The Pharmacopœia has already made tabellæ official, without, however specifying how they are to be made (a method characteristic of that useful volume). This omission has since been supplied by many pharmacists, and, following their suggestions, a great variety of remedies may be exhibited in the elegant and convenient manner. The drug may be incorporated with powdered chocolate and starch, or made into a mass with spirit (sugar or saccharin being added in the case of nauseous remedies); the mass is then weighed into portions, each containing the required dose, moulded into shape, and dried. When applicable, such preparations as these are an immense improvement on mixtures, confections, &c. The aim of medicine being to reduce the patient's suffering, it seems to me that every effort should be made to avoid adding to it by administering remedies in a nauseous and disagreeable manner. This is a subject which does not appear to meet with the consideration it deserves at the hands of English pharmacists. The time is approaching when the old-fashioned family medicine-chest will be relegated to the shelves of the past, when suffering humanity will absorb its remedies, as it were, unconsciously, and be no longer terrified and disgusted by enormous doses administered in an inelegant manner.

I have amongst us many relics of barbarism which might well be dispensed with. In considering this question I do not lose sight of the requirements and prejudices of the public. Time-honoured popular remedies, familiar to every one, however useless and unscientific they may be, will always have a certain demand, and their abolition is neither necessary nor desirable; but the supply of these is fast passing from the hands of the ordinary chemist and druggist, and the place, in the Pharmacopœia, at least, should be taken by the use of a more reliable and scientific nature.

Caution and steady progress which are so characteristic of us as a nation are no doubt extremely valuable; but I would venture to point out that caution may be carried to an undesirable excess. Whilst we are deliberating over a new process or recovering other nations make practical use of it, flood our markets with the result of their labours, to the detriment of our profits and the mortification of our pride.

One of the most noticeable features in the workers in English pharmacy is the continual effort to temporise between the old methods and the new. They are afraid apparently to completely discard old processes or ingredients, no matter how useless or expensive, and so they endeavour to effect a compromise, but not always satisfactory results. (A tempting instance of this is the manufacture of the oleates of the

Pharmacopœia.) Again, whilst, for instance, admitting the superiority of the metric system in the official estimations (since students are always taught it), they would not adopt it entirely; and hence arises the employment of absurd fractions and such slovenly and unscientific phrases as "about." Among new processes of manufacture may be mentioned the cold process for making syrup of tolu. By incorporating the balsam with a portion of the sugar, macerating for a day or two, and percolating over the remainder of the sugar, coarsely powdered, a syrup can be produced in every way superior to the old method.

The passage of pharmacy from the shades of empiricism to the light of science is a phenomenon that is fraught with universal interest, and it is gratifying, therefore, to record, although so imperfectly, these efforts to hasten her progress to her zenith.

Messrs. Burroughs, Wellcome & Co. inform us that in appreciation of the merits of this essay, and in addition to the money prize which they have given, they will present the author with a library copy of Remington's "Practice of Pharmacy."

Obituary.

BARNES.—On May 1 Mr. Demas Barnes died at his residence in Brooklyn, New York, aged 61. Mr. Barnes, about thirty years ago, in conjunction with a Mr. John F. Henry, brought out the patent medicine known as "Drake's Plantation Bitters (S—T—1860—X)," which was during the time of the American Civil War, 1859-1863, the most extensively advertised medicine ever known, and out of which Mr. Barnes made a fortune of considerably over a million dollars. A few years after the conclusion of the war Mr. Barnes became prominent in American politics, and for a while represented South Brooklyn in Congress. He afterwards became part proprietor of Wm. C. Kingsley's journal, *The Eagle*, and aspired to the mayoralty of Brooklyn, but threw away his chances by alienating the Irish vote in consequence of his denunciations of the Roman Catholic Church in letters written to his journal during a trip through Europe. Upon his return to America he sold his interest in the patent medicine trade, quarrelled with his partner in the newspaper business, and started an opposition paper, over which he is said to have lost \$250,000; but he afterwards made another million by successful speculations in Louisiana bonds. Mr. Barnes made numerous gifts to the city of Brooklyn, one of them being the statue of John Howard Payne in Prospect Park. He was actively engaged in local politics until shortly before his death, but he never could attain the position of chief magistrate of his city, an honour upon which he had set his heart. Mr. Barnes was twice married. His second wife, who survives him, was a belle of Louisville, in Kentucky, at the time of their marriage, eight years ago. He leaves two daughters, one by his first and one by his second wife. Mr. Barnes owned considerable real estate in New York and Brooklyn, and his fortune is estimated at \$3,000,000.

HOLDEN.—On April 25, Mr. George Henry Holden, chemist and druggist, late of Walsall. Aged 22.

MERRYWEATHER.—On April 24, Mr. Charles Merryweather, pharmaceutical chemist, Mount Sorrel, near Loughborough. Aged 72.

MILLER.—On May 3, Mr. John James Miller, chemist and druggist, Darlaston, Staffordshire. Aged 57.

NORBURN.—On April 7, Mr. A. H. Norburn, chemist and druggist, Cazenove Road, Stamford Hill, London. Aged 68.

SINCLAIR.—On May 5, at Forney, Texas, U.S.A., Robert Murray Sinclair, chemist and druggist, late of 34 Upper Kirkgate, Aberdeen.

THE Iowa Legislature has enacted a law under which druggists are compelled to label every package of poison they sell, not only with the word "Poison," but with the names of two antidotes.

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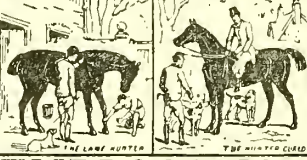


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For RHEUMATISM, GOUT, and SCIATICA, Chronic Skin Diseases, Scrofula, Rickets, and some Diseases peculiar to Women.

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Woodhall Spa

SEE SEABURY & JOHNSON'S ADVERTISEMENT of
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EDITORIAL NOTES.

THE PHARMACEUTICAL WEEK

THE forty-seventh annual meeting of the Pharmaceutical Society of Great Britain was not one to be proud of. The attendance of members was much smaller than usual, and the criticisms of the action of the Council were, as a rule, worse than valueless. Some of them fully justified the rejoinder with which Mr. Cartwright enlivened the proceedings. If the annual meetings of the Pharmaceutical Society are to be given over to the miserable, stale, and unprofitable

complaints of circumstances common to everybody, of competition, of tax-gatherers, of all enterprises which seem threaten any of the time-honoured profits of the trade, they will soon sink to a condition from which it will be difficult to rescue them. The better men in pharmacy should stick to this. Most of the speeches made at Bloomsbury were rambling comments on half-understood statements, made with no idea of serving a practical purpose, and worthy even of serious answer. These meetings of the Society cannot but be discursive, but garrulity in the middle of the day and in the heart of the metropolis ought to be at least discouraged if not suppressed.

In these remarks we by no means refer to the manner in which Mr. Broad introduced his special resolutions. We do not believe that the proposal which he made that the Society should employ a peripatetic informer to go about, as Mr. Urwick expressed it, seeking whom he could lay charges against, is a sound one; nor does it seem to us practicable to lay down a hard-and-fast rule as to the way the Council should act towards all offenders. But the manner in which the proposals were brought forward was in every way excellent. Proper notice was given of them, they were clear and concise in themselves, and Mr. Broad wasted no words in placing them before the meeting. The first was squarely rejected after a few minutes' discussion; the second was ruled out of order by a performance which was not quite straightforward. The amendment to the first so far covered the second as to put the discussion of the latter to some extent out of court; but the presidential pruning-knife ought in all fairness to have been applied to the amendment rather than to the resolution which it thus anticipated.

Mr. Carteighe carried the general sympathy with him when he burned warmly on those adversaries who carped at the petty details of the management of the Society without understanding them; but his opening oration went very near to the verge of prosiness, a characteristic which in Mr. Carteighe's speeches would be unique. Fifty-five minutes at a stretch is a severe strain to listeners, even when the speaker is generally interesting as the President, and his topic the perennial one of the general virtues of the Pharmaceutical Council, and some condensation of style is a first condition if many men are to be attracted to the meetings.

The election has been something of a surprise. The far north of England is to be congratulated on the abundant representation which it will in future enjoy; but it is in some respects unfortunate that Scotland should have failed to secure the second member on the Council, which a few years ago was looked upon almost as a prescriptive right. The position of Mr. Wills on the poll shows either that the members of the Society are very open to instruction, or that the large majority share the somewhat far-fetched alarm of the four philosophers who offered their advice before the election.

Of the festal proceedings of the week little need be said here. It was anticipated that the attractions of the new hall and laboratories, which have cost the Council so much thought and anxiety, would have sufficed to balance the absence of that female beauty for which past conversazioni have been famous; but this base hope was destined to be ruthlessly crushed. Pharmacists were so generally faithful to the fair, that the latter not being included in the invitation nine out of ten of the *habitués* declined the Council's invitation. The dinner was well attended, and the guests included fair samples of the top row in the medical and scientific worlds. The most interesting, as it was also the only novel feature of the festivity was the toast to the Pharmaceutical Society of Ireland, responded to by its President, Mr. J. E. Brunner, M.A. The terse style of the Irish

President contrasted strongly with the more florid performance of his fellow-countryman on this side of the channel, but his "team," as the latter somewhat unceremoniously termed his Council colleagues, might perhaps be willing to part with a little of the home rhetoric for some of the more respectful treatment, which, perhaps, they might hope to get if they sat round the Dublin rather than the London table.

DRY MEDICINAL EXTRACTS.

THE introduction of standardised extracts into the British Pharmacopœia has been the means of bringing us face to face with a development of pharmacy which American pharmacists have in a measure accomplished, and which has lately been looked upon here in a favourable light. We refer to the preparation of dry standardised extracts. At present there are two extracts in the British Pharmacopœia the alkaloidal values of which are fixed, viz., extract of opium and extract of nuxvomica. The preparation of these presents no features of insuperable difficulty, but it is a matter of common knowledge that although the products may always be uniform in alkaloidal content they certainly are not so in physical appearance and consistency. An inquiry which we recently made regarding extract of opium revealed the fact that large manufacturers carefully select the opium which they use for the extract, because some samples contain so much extractive matter that it is not possible to reduce the extract to proper alkaloidal strength. This point is one which is of the first importance in the making of standardised extracts; we must not only fix a percentage of active constituent, but ascertain if the proportion of extractive matter generally present in the drug is of fair constancy. The consideration is one which did not receive sufficient notice from the investigators who did such excellent work in regard to the standardisation of extract of nuxvomica, and the consequence is that that extract is sent out of varying degrees of consistency, but as a rule in the form of a pourable extract. There is much complaint amongst pharmacists regarding this defect, and a remedy for it is required. It may be noted that the consistency of an extract is directly related to the amount of extractive matter in it. Thus, an opium which contains 10 per cent. of morphine and more than 50 per cent. of extractive or soluble matter (including morphine) is obviously unsuitable for making the extract, because the whole of the soluble matter would be dissolved by the watery menstruum. In the case of extract of nuxvomica the menstruum is one which, though capable of extracting the whole of the alkaloid, exerts a limited solvent influence on the extractive matter, and for that reason the product is generally too thin. The simplest remedy for this would be to reduce the alcoholic strength of the menstruum, or to treat the exhausted marc with water and evaporating, thereby obtaining inactive and soluble extractive matter. With a suitable proportion of this diluent added to it the thin active extract could be evaporated to pilular consistence. There is a strong tendency, however, to dilution in another direction, which Mr. W. A. H. Naylor recently gave expression to by recommending that "the soft extract be dried by exposure to warm air in thin layers and reduced to powder, using sugar of milk as a diluent. By this means the object of obtaining the standardised extract in a stable form is achieved." The result would be a dry extract similar to what was officialised under the name of "abstracts" in the last edition of the United States Pharmacopœia, and like the *Extracta sicca* of the German Pharmacopœia. The United States abstracts are made by evaporating the extracts to dryness, sufficient milk sugar being added to them

to make them just twice the strength of the crude drugs, or about twice the strength of the corresponding fluid extracts. The preparations were introduced into the Pharmacopœia in order "to supply a demand which had arisen for dry powdered extracts." Five years have elapsed since the Pharmacopœia was published, and lately the *Pharmaceutical Era* has thought it expedient to feel the pulse of the trade regarding the popularity of the abstracts, and has had a good response from retail and manufacturing pharmacists, all being unanimous in saying that the preparations are little used. Dr. E. R. Squibb has not received any orders for them since 1884; the William Merrill Chemical Company declare that the "introduction of 'abstracts' into the U.S.P. was hasty and ill-advised, and was so considered at the time by manufacturers generally. Our orders for such remedies, as a class, have been so few that we have never felt the necessity of adding them to our lists." W. H. Schieffelin & Co. regard the idea of a solid concentrated preparation, bearing a definite relation to the drug, as a good one, and put abstracts in their list of manufactures, and since 1880 have been ready to fill orders, but physicians seldom write for them, therefore there is no demand from pharmacists. Their sales have not been sufficient to compensate for the outlay and trouble taken to place them in stock. Mr. H. W. Snow, of F. Sterns & Co., says that the demand for them from his house "amounts substantially to no demand at all." The reason for this failure is not far to seek. One retail pharmacist states that the abstracts are "too bulky to be substituted for extracts in pill masses;" another that as a class abstracts possess little advantage over extracts, except in the case of hygroscopic extracts, such as nux vomica. One pharmacist in a period of about eighteen months and covering nearly 20,000 prescriptions dispensed one abstract, viz., abstract of belladonna, 2 grains. He adds that abstracts are "too weak for efficient service, and should be replaced by powdered extracts, when the drug can be represented by such preparations." Other opinions simply corroborate the foregoing, and all go to show that abstracts as such are a failure. That is due partly no doubt to the new name. Physicians are exceedingly conservative regarding galenicals, and from the United States we may take this lesson, that if extract of nux vomica, or any other similar preparation, is materially altered, the old name should, if possible, be retained. Still another lesson can be taken from the *Pharmaceutical Era's* investigation, viz., that if dry extracts are to be introduced into the British Pharmacopœia, there should be little if any difference between their strength and that of the extracts now in vogue. There lies the difficulty. The compilers of the United States Pharmacopœia found the 2 in 1 strength to be that which was most favourable to the keeping properties of the preparations, but it so happens that there are stronger powdered dry extracts in the market. Are these what they are said to be? and if so, how do they retain their pulverulent condition? Before pharmacists can urge the officialising of powdered dry extracts in the Pharmacopœia, they must make a reply to that question. We hope, therefore, that some work will be done on the subject by investigators. It is certainly one which requires to be looked into.

DEPRESSION IN TRADE.

MR. GIFFEN has always been the most cheerful of statisticians. Out of figures which occasion gloom and almost despair to ordinary economists, he can always extract hope, if not gratification. In his latest "Report to the Secretary of the Board of Trade on Recent Changes in the Prices of Exports and Imports," Mr. Giffen handsomely maintains his optimistic reputation. The steady decline in our national

business during the past fifteen years, which has appeared on the surface of the statistics collected and published monthly by the Board of Trade, has attracted the attention of alarmists of various classes, and has been a favorite weapon with the agitators for a revision of our fiscal system. That there had been some shrinkage in our business has been generally assumed, and free-trade apologists have argued that we must expect fluctuations, that we are passing under a temporary cloud, that foreign energy is growing, and so on. Mr. Giffen does not find it necessary to make an excuse whatever. He finds on analysing the figures that a true interpretation of them shows British trade to be constantly growing, if not by leaps and bounds, at any rate in a very substantial manner. The last year when trade was in a statistically brilliant condition was 1873. In that year the declared value of those goods exported, the proportionable price of which it is possible to calculate, was 172 millions. The declared value of those classes of goods went down to 122 millions in 1879, recovered somewhat and reached 146 millions in 1883, declining again down to 131 millions in 1886. So with articles imported, the value of which can be similarly estimated. In 1873 these were declared at 308 millions; in 1886 they were only worth 263 millions. So much for published figures. Now for Mr. Giffen's interpretation of them. He has gone through the whole range of the articles imported and exported, dividing the quantities by the declared value in every case for each year, thus deducing the average value per ton, per cwt., per lb., per gallon, per yard, or per thousand, as the case may be. Next he has determined the proportion which each article bears to the whole, and then has deduced an "index number" of the average value of the exports and imports for each year. From the variations of this index number year by year he can test the truthfulness, as it may be expressed, of the official figures. The result brought out is shown in the following table:—

	1873	1879	1886
Declared value of exports of enumerated articles	£ 173,000,000	£ 122,000,000	£ 146,000,000
Value if 1873 prices had been maintained	173,000,000	174,000,000	160,000,000
Declared value of imports of enumerated articles	308,000,000	289,000,000	263,000,000
Value if 1873 prices had been maintained	308,000,000	349,000,000	250,000,000

The same facts may be presented in another form. Of the goods exported, taking the general average all round, £37. 10s. would buy in 1886 what 66l. would buy in 1873; and of the imports 60l. would buy as much in 1886 as 81l. would procure in 1873.

These statistics are worth remembering amidst the very general complaints of commercial depression. Nowhere Mr. Giffen has shown that the national wealth increases at the annual rate of 3 per cent., while the population increases only at the rate of 1.3 per cent. If it were only that the increased wealth were fairly distributed, which we fear cannot be so easily shown, we should have a very satisfactory condition. But even regarding actual possessions stationary, it is evident that we are all much richer than we were a year or two ago. A hundred pounds a year will buy from 20 to 25 per cent. more goods now than it would fifteen years ago. Unfortunately it could not be shown that this statement does not apply to the chief necessities of life, but to some extent the general condition must benefit all classes.

It seems probable that we have not been as thankful as we should be for the falling prices which have prevailed

many articles of great consumption. In most markets a fall of price is generally alluded to as if it were something like a disaster. A wholesale druggist holding stock of goods naturally gets gloomy at the continual drop; but in the matter the interests of the world generally are in opposition to those of the individual holders, though the tone of the market reports is apt to be taken from the latter. Glancing through Mr. Giffen's table, we notice that among exports since 1840 the average price of alkali has fallen from 1 to 5s. 9d. per cwt., cotton piece goods from 4½d. to 2½d. per yard, flint glass from 117s. 2d. to 47s. 10d. per cwt., pig iron from 70s. 4d. to 43s. 2d. per ton, soap from 33s. 2d. to 2 per cwt., refined sugar from 37s. 6d. to 14s. 3d. per cwt., and wool from 1s. 4½d. to 10d. per lb. Among imports the most important fall has of course been that in wheat and other cereals; but besides these hundreds of articles are not more than half the price at which they were imported twenty, thirty, or forty years ago. The increased comfort thus promoted is incalculable, and this consideration should be borne in mind when we read about depression in Mincing Lane.

PECACUANHA CULTIVATION IN INDIA.

On sale at this week's drug auctions of about 1 cwt. of ipecacuanha imported from Singapore, and in all probability grown in the neighbouring state of Johore, again directs attention to the possibility that the Eastern hemisphere may soon enter the lists as an active competitor in this article with South America.

The history of the introduction and the attempts at cultivation of the ipecacuanha plant in British India is all but made up of chapters of disappointment, and, but for the extraordinary persistence of the botanists under whose auspices the experiments were conducted, it is highly probable that the attempts would have been abandoned long ago as altogether hopeless. The various Government departments who tried ipecacuanha-growing, with one notable exception, have been forced at last to admit that there was no prospect of ultimate success. The attempts to acclimatise ipecacuanha in India date from 1866, and the propagation of the plant has been carefully and systematically attempted in six different parts of the British possessions, viz. at Calcutta; at Sikkim and Darjeeling, in the north-east; in the Khasia Hills in Assam, in the extreme east; at Bombay, in the west; at Ootacamund and Barliar in the Nilgiri district (south); and, finally, at Singapore and Johore in the Straits Settlements. In the first attempt, at Calcutta, to grow ipecacuanha from one South American plant sent over from Kew Gardens, several offsets were obtained from the original plant, but none of them ever thrived at Calcutta. Neither did other plants subsequently sent over from Britain, and the culture seems to have been finally abandoned there about 1875. Still more unsuccessful were the experiments at Bombay, whence Sir Joseph Hooker despatched two plants from Kew in 1869. They died shortly after their arrival in India, leaving no viable progeny. The trials in Southern India were somewhat more successful. They commenced in 1866, when a few plants were sent out to Ootacamund, and subsequently, in 1871 about 100 plants were despatched from the dwindling stock at Calcutta to Barliar, "a low-lying, moist spot in one of the gorges of the Nilgiris," in the same part of India as Ootacamund. So far as we are aware no official reports have ever been published with regard to the result of the Ootacamund experiment; but that at Barliar, from which much was expected, did not succeed well—indeed, Mr. Lawson, the Director of the Nilgiri cinchona plantations, writing in 1887, expressed that the climate at Barliar had not proved suitable

for ipecacuanha-growing, but recommended that experiments on a large scale should be made at Nilambur, where he knew the plant to have flourished well. The Madras Government took steps to carry out Mr. Lawson's advice, but we have not heard with what further results. The Khasia Hills, in Assam, have also been tried for ipecacuanha-growing, a supply of plants being sent there from Sikkim in 1873; but, as nothing has since been heard of this consignment, it may be taken for granted that the plants have long ago died out. The attempts at propagation in the Eastern Himalaya region have been on a very much larger scale, and for a long time seemed to promise a successful issue. They date back as far as 1867, when one of the Calcutta plants was sent to the cinchona gardens at Darjeeling, where it flourished satisfactorily. About the same time experiments, also apparently successful, were made with a few plants at the Sikkim cinchona plantations in the same neighbourhood. So promising seemed the attempt that, in 1871, several hundred young plants, forwarded from Europe to Calcutta, were at once sent on to Sikkim as the place where they would be most likely to prosper; and in April, 1874, there were no less than 63,423 plants growing in the valleys of the Sikkim Himalaya. It seems, therefore, almost inexplicable that only a few years later, in 1879, after the dried root had actually been harvested, tried in several medical establishments in India, and found quite equal to the South American drug, Dr. King, the Superintendent of the Calcutta Botanic Garden, had to pronounce the experiment a failure so far as Northern India was concerned. It appears, however, that even up to the present time a considerable number of plants exist—or at any rate existed as late as 1886—at Darjeeling; but they are evidently cultivated more for the love of the thing than in the hope of proving a profitable commercial venture. Yet the Himalaya plantations, even if they did not bear out the expectations entertained of them, may claim the merit of having made possible the only successful experiment in the Eastern world, viz. that in the Straits Settlements, where, on stepping-stones of their dead selves they have risen to better things. The first ipecacuanha plants arrived at Singapore in 1878 from Sikkim, and have prospered both there and in the neighbouring native state of Johore, where in 1886 thousands of plants were flourishing in excellent health. It is believed that the dried ipecacuanha root which was sent to London from Singapore at the end of last year was produced at Johore, and it is quite likely that in a few years' time we shall receive regular supplies from that quarter, which ultimately may contribute to render us as independent of the South American drug as other parts of Asia have made us independent of the New World in regard to cinchona.

AUSTRAL-AFRICA AND BRITISH TRADE.

VERY little is known in this country of the vast tract of territory bordered on the north by the Zambesi river, on the east by the Indian Ocean, and on the south by the Cape Colony, which includes, besides the independent Transvaal and Orange Free State Republics, the colony of Natal, a strip of seaboard under Portuguese control, and various semi-organised countries known as Zwasiland, Zululand, Basutoland, Pondoland, Bechuanaland, Amatongaland, &c. The Rev. John Mackenzie, a Bristol missionary, possessing as intimate a knowledge of what he terms Austral-Africa as any other white man, is therefore doing an excellent work in enlightening public opinion in this country on the intricate questions which are agitating that quarter of the Eastern hemisphere, and to the part which Great Britain will be

called upon to play in their solution. Mr. Mackenzie's object is in the first place political, he being an ardent advocate of an English protectorate of South Africa "from the Cape to the Zambesi," to bring about which he is now actively engaged with pen and mouth. On Monday, in the pursuance of this aim, Mr. Mackenzie addressed a large meeting in the City of persons connected with Southern Africa, and his views were evidently thoroughly endorsed by the Right Hon. Joseph Chamberlain, who took the chair on that occasion. To discuss the rev. gentleman's political views lies outside the scope of this journal, but it is worth while, to consider for a moment the commercial aspect of the question, and to look at the advantages which must accrue to whatever nation exercises a paramount political influence in Southern Africa. It is only within the last few years that European nations other than Portugal and Great Britain have developed an active interest in the affairs of the southern half of Africa. The Germans have established themselves on several points along the coast, their principal settlement being found some distance north of the Zambesi territory; the Congo Free State cuts deep into the heart of equatorial Africa; and the French, who already have a footing at various points on the northern part of the continent, and in Madagascar, may at any time undertake the active advancement of their interests in the south also. In the presence of so much eagerness to obtain a share of the spoil there can be no doubt (and both Mr. Chamberlain and the lecturer expressly called attention to this danger) that any determined attempt on the part of Great Britain to relinquish her hold upon Southern Africa would be followed by the speedy occupation of the vacated place by another European nation. Mr. Chamberlain suggested that the withdrawal of Britain would be followed by the temporary ascendancy of the Dutch element, who, unable to cope at the same time with the purely native and the semi-British population, would throw themselves into the arms of Germany. That Germany, if she should step into Britain's place, would do so at the bidding of the Cape Dutchmen seems very unlikely, for the latter must indeed be strangely unlike their kindred in Europe if they do not detest the Germans above all other nations; but from Mr. Mackenzie's remarks it appears beyond doubt certain that the Transvaal Republic has lately been pursuing a policy as antagonistic as possible to British interests. One of the pet schemes of the present rulers of the Transvaal is the construction of a railway to Delagoa Bay, which would directly connect the Republic with the outer world and create a competing route with the railway system of the Cape Colony. The Delagoa railway scheme has been hanging fire for years for want of funds, but to render its eventual realisation comparatively harmless, and at the same time to create an unrivalled trade route which would tap the richest districts of the inland country, Mr. Mackenzie urges the extension of the Cape railway system, which now connects Cape Town and Port Elizabeth with Kimberley, on the Orange River, northwards beyond that river, *via* Kimberley, through Bechuanaland, and, ultimately, on to the Zambesi. This railway, it is asserted, would secure practically the whole of the inland trade to Great Britain. It would tap the richest diamond, gold, copper, coal, and iron districts, as well as the country capable of producing the largest crops of cotton, rice, and other products. There is in South Africa a steady rush of the white element northwards to the countries which are constantly being brought within the range of European enterprise, and an equally strong current of the black element towards the south, where the ægis of British authority enables the natives to live in unaccustomed quietness, and the requirements of the white men furnish them with constant employment, and enable

them to live in a state of comparative luxury. Mr. Mackenzie insists that a recurrence of peaceful times, and the knowledge that Britain had determined to make its influence felt throughout Southern Africa, would greatly assist the revival of our South African trade, which of late has dwindled down to only a shadow of its former self. In 1882 the Cape Colony and Natal imported, according to Mr. Chamberlain's merchandise from the United Kingdom to the value, in round figures, of 8,000,000*l.*; in 1886 only 3,500,000*l.* In 1886 they exported 6,250,000*l.* worth of merchandise to the United Kingdom, in 1886 only 4,500,000*l.* worth; but this exclusive of the gold and diamond exports, which alone in 1886 reached 3,500,000*l.* We are bound to say that Mr. Chamberlain's statistics do not at all tally with the official figures given in the Colonial Office list, but no doubt as a responsible statesman he must have taken care to get his figures correctly. Besides the great staple exports of South Africa—wool, ostrich feathers, ivory, wine, &c.—there are numberless smaller articles in which an important business might be created or expanded. These would include, besides the drugs which we already receive from South Africa such as aloes, buchu, gum, argols, &c., others from the more tropical Zambesi regions, which the completion of the railway would almost certainly draw to the Cape, and among which are calumba, strophanthus, indigo, senna, and many others.

The Cultivation of Patchouli. Mr. C. Curtis, of the Forest Department, Hong Kong, gives the result of an experiment in cultivating and harvesting one-twentieth of an acre of patchouli in the Experimental Nursery, Hong Kong. Cuttings were put in in January, and the last week in February one-twentieth of an acre was planted 3 feet apart. The soil of the nursery is poor, and the only manure used was wood-ashes. On July 21 the whole was cut and weighed in a green state 449 lbs. After being dried in a cool, airy shed for ten days the weight was 106 lbs. The leaves were then separated from the stems and each lot weighed separately, the result being—good leaf, 69 lbs.; refuse, 37 lbs. Samples were submitted to two London brokers both of whom said that the sample leaf was good. One valued it at 8*l.* to 10*l.* per lb., and the other at 10*l.* to 11*l.* The same patch was cut again the first week in January of this year, and the yield and results were approximately the same in July; so that there is no doubt an acre of patchouli will yield considerably over one ton of good leaf per annum. Mr. Curtis thinks that, if there is a steady demand, nothing more paying than patchouli can be planted by native cultivators, as no special skill is required in its cultivation, or machinery of any kind in its preparation. That the system of cutting the whole patch at once is the best system possible, he is by no means sure. He thinks that, if only one of the rows were cut at first, and the remainder after they had commenced to grow again, there would be less exposure of the roots to the sun, and consequently less check to the growth. The principal point to be observed in drying is to dry slowly and not to the point of crispness, otherwise the leaves get broken to powder and are of less value.

* *

Brazilian
Gum
Arabic.

At the instance of the Kew Gardens authorities the Foreign Office has applied to Mr. E. Ant-hack, British consul at Pará in Brazil, for information regarding the origin of the gum which, for some time, has been consigned to this country, principally to Liverpool, as a substitute for gum arabic. In answer to this communication the consul states that the gum in question is not a product of his district at all, but is found in considerable quantity in the province of Piahy, whence it is shipped at the port of Parnabyba in transit to Pará and sent on from there to England. The gum which is thus brought into commerce consists of two different kinds. One is obtained from a tree called "jatuba," and is of a whitish and pale yellowish colour, and in appearance like gum arabic. It is said to ooze out from the root or lower portion of the trunk and to dissolve by heat. The other kind is from a tree called "angico," and is of reddish colour, oozing

attaching the bark. This latter gum dissolves in water, and is considered a substitute for gum arabic. The jatuba gum has been identified by the Kew botanists as the product of *Myrcia courbaril*, L., known as "locust tree" in the West Indies, and as "simiri" in Guiana. It is a gum resin, resembles ani in its characteristics, and is used as a varnish. The angico gum, as was mentioned in THE CHEMIST AND DRUGGIST some time ago, is derived from the *Acacia angica*, Mart., and is a soluble gum, which, for certain purposes, constitutes an efficient substitute for gum arabic. A supply of leaves and flowers of the tree yielding the gum may shortly be expected from Brazil, and this will probably clear all doubt as regards the botanical source.

* *

Camphor Trade in Formosa. The Chinese Governor of the island of Formosa some time ago declared the camphor trade in the interior of the island a Government monopoly, thereby greatly injuring a number of private traders, who for many years had dealt extensively in the article on their own account. Troubles ensued with some of the foreign houses, and the United States Government addressed a remonstrance on the subject to the Tsung-li-Yamen in Peking—a body somewhat resembling our Foreign Office. We now hear that this appeal has remained fruitless, the local authorities, in a communication dated February 16, justifying the action of the Governor of Formosa, and declaring their intention of maintaining the monopoly. It appears that in those parts of the island now thoroughly bought under Chinese control the camphor trade is free, or at any rate subjected to but few restrictions; but, unfortunately, in those districts scarcely any trees are left, while in the mountainous interior of the island, nominally under Chinese dominion, but in reality occupied by tribes of like savages, the camphor laurel still flourishes. In the interior districts of the interior the Chinese, at a considerable rate, maintain military stations, and they partly defray the expense of these by keeping to themselves the exclusive right of the camphor trade. The Tsung-li-Yamen also point out that in prohibiting foreigners from penetrating into the safe centre of the island they are actuated by a desire to avoid such complications with foreign Governments as might result from the murder of their subjects by the aborigines. The Chinese arguments appear to be unanswerable, and we therefore take it that the camphor monopoly will be kept up—at any rate for the present.

* *

Supposed Elixir. The popular belief that the smoke of burning henbane seed draws a worm or maggot from an aching tooth, and thereby relieves it, has just had some light thrown upon it by Mr. Hogg in a report to the *Medical Press*. A young domestic servant, who suffered severely from toothache, got some henbane seeds, which she placed over a hot cinder, allowing the fumes to get into the mouth. Soon afterwards she had six or eight maggots drop "out of her teeth" into a tumbler of water she had ready for the purpose. Her mistress showed them, and they were handed to the medical attendant of the family, who sent a mounted specimen to Mr. Hogg, who has found it to be neither a worm nor a maggot, but a veritable embryo of a parasitic entozoa, belonging to the trematoda or fluke family, a class of animals known to infest mankind as well as the lower animals. The fluke in this case is, how did the embryos of the fluke find their way into the patient's decayed tooth? In one or two ways. In a likelihood the ova of the fluke may have been conveyed into the mouth and stomach by eating tainted animal food, the life of a sheep suffering from fluke. The eggs may be taken in in polluted drinking water—more frequently, however, in diseased meat, fish, or fowl, which during the masticating process is left behind and safely lodged in a broken tooth or an exposed portion of the alveolar process, to be retained until more fully developed into the wriggling embryos which were finally dislodged by the henbane fumigation. Here, then, is a very reasonable explanation of what most intelligent pharmacists and medical men have long regarded as little short of nonsense.

New Development in Pharmacy.

Mr. J. W. Colcord, lately of Lynne, Mass., the genial secretary of the Massachusetts Pharmaceutical Association, has just taken a new departure in developing the business side of pharmacy, which is being watched with interest by American pharmacists. The *Western Druggist* informs us that he has taken a suite of rooms in Boston, and neatly fitted them up as a pharmaceutical and medical exchange. One large room will be dedicated to the use of the State and other pharmaceutical and medical organisations, for committee meetings, &c., and for the use of pharmacists when visiting the city at any time, as a home. All the prominent pharmaceutical and medical journals, and other accessories to induce members of the medical and pharmaceutical profession to avail themselves of its privileges, will have a place here. Here business and society engagements may be made, and physicians will find it convenient in arranging meetings with patients or physicians from other localities. The main room will be devoted to the exhibition and sale of pharmaceuticals and apparatus used in the business. Mr. Colcord intends to devote his whole time to the new venture, and has given up his retail business in Lynne for that purpose. "The Pharmacy Hall" will probably be the name of the concern, but however that may be, it deserves success.

POISONING CASES.—At Worcester Guildhall last week, Mary Eleanor Powell, widow, and James Henry Keatley were committed for trial on the charge of wilfully murdering Henry Powell, a publican, and husband of the prisoner Powell, by the administration of narcotics. Dr. Stevenson, official analyst of the Home Office, proved the presence of poison in the stomach and liver of deceased, and eight different chemists proved the purchase of laudanum and opium.—William Waugh, farmer, Allan's Grange, near Piercebridge, has been the victim of a sad mistake. At the Darlington market on Monday of last week he felt unwell, and, having obtained medicine at a chemist's, returned home. A doctor was called in, and afterwards one or two doses were given, by mistake, to the patient from a bottle containing lotion, and from the effects of this Mr. Waugh died on Thursday. An inquest was held on Friday (May 11) when the jury returned a verdict of "Death by misadventure."—On Saturday Mr. D. Wightman, the Sheffield coroner, held an inquest at the South Sea Hotel, Fulwood Road, as to the cause of the death of Elizabeth, wife of John Kelk, Crookes Road, Broomhill. The evidence showed that deceased, who was 63 years of age, had been ill for some length of time, and on the previous day had got a teaspoonful of carbolic acid from her daughter Lily in mistake for medicine. She only lived about a quarter of an hour after having taken the dose. The carbolic acid had been used for disinfecting, and was on a table along with some other bottles. It had been placed there a few minutes before after being used to disinfect the room. Mr. Wm. Skinner, surgeon, who had attended the deceased, said that the medicine which he had prescribed was of a similar colour to the acid. The jury returned a verdict in accordance with the evidence.—Agnes Peddle, five days old, died in Liverpool, on Friday of last week. The child was taken ill with diarrhoea the second day after its birth, and got a dose of castor oil, and next day three or four drops of syrup of rhubarb, a dose which was repeated on Wednesday, and was also tried on Thursday, but the poor thing could not swallow it. Meanwhile opium in some form had been given, for the medical evidence showed that the baby died from the effects of opium, but that if it suffered from diarrhoea, as alleged, it would be suitable to give it syrup of rhubarb. The jury brought in a verdict accordingly.—At the Halifax West Riding Court, on Saturday, Jane Greenwood, the wife of Joseph Greenwood, a farmer, was charged with having, on May 8, attempted to poison her husband by putting a quantity of blue vitriol in his tea. Mr. Greenwood is an old man, about sixty-seven years of age, and the accused, his third wife, is a quarter of a century younger. He was pouring out a cup of tea for himself one morning last week, when he noticed that it looked queer. He then examined the tea-caddy, and he found that the tea was mixed with sulphate of copper. He suspected that Mrs. Greenwood had put it there, but could not prove it, so she was discharged.



AND

Literary Notes.

A Practical Treatise on Animal and Vegetable Fats and Oils.

Edited, chiefly from the German of Drs. Karl Schaedler, G. W. Askinson, and Richard Brunner, by William T. Brannt. Philadelphia, 1888: H. C. Baird & Co. London: Sampson Low, Marston, Searle & Rivington. Large 8vo, pp. 28 + 740, and 244 engravings. 35s.

WITH the exception of the "Oils and Varnishes" of Churchill's Series of Technological Handbooks, there is no book in the English language which deals comprehensively with animal and vegetable fats and oils, and none which treats of the manufacture and chemical testing of these bodies with any fulness. The publication of this treatise by Brannt will therefore be welcomed by many English chemists. The work is a large one, like most American treatises; this is not owing to wordiness, however, but to the numerous excellent woodcuts which illustrate the text. This collection of illustrations is unique and of very great value to the manufacturer, as, in most cases, not only are there illustrations giving an external view of the plant, but sections of the various parts are added, so that a fairly correct estimate of the value of any piece of machinery can be arrived at. The book is divided into three parts, the first treating of fixed fats and oils, there being thirteen chapters devoted to the sources of fixed fats and oils, their physical properties, chemical constitution, manner of obtaining them (expression and extraction), and purification; two chapters are devoted to tallow; a long chapter is devoted to descriptions, properties, adulterations, &c., of oils and fats; then follow chapters on waste fats, testing for adulterations, bleaching, and finally a chapter on the manufacture of artificial butter and its constituents. This part is based on Schaedler's "Die Technologie der Fette und Oele des Pflanzen und Thieresichs." The second part of the volume is devoted to essential oils, and is divided into four chapters, the subject being treated in a similar manner to the fixed oils, the properties and manufacture of the oils being first described, then each oil commented upon, and lastly tests described. Askinson's "Die Fabrikation der Aetherischen Oele" has been drawn upon for much in this part, but the articles on American essential oils are not to be found in that work. Part III. is devoted to lubricants of all kinds, their properties, tests (comparative and qualitative), and manufacture. In an appendix the manufacture and properties of ozokerite are described, and a list of U.S. Patents (1790-1887) relating to fats and oils is given. This summary of the contents indicates the nature of the work, which has been carefully edited throughout, and is equally suited for the requirements of the manufacturer and the analyst. There are comparatively few errors in the book, and these are chiefly typographical.

Foods: their Composition and Analysis. A Manual for the use of Analytical Chemists and others. By Alexander Wynter Blyth, M.R.C.S., F.C.S. Third edition. London: C. Griffin & Co., 1888. Crown 8vo, pp. 32 + 640. Price 16s.

THIS manual has gained a high reputation amongst analytical chemists as a work of reference on all matters which pertain to foods and correlated substances, such as spirituous liquors, condiments, and water. There is a certain amount of convenience in having one volume devoted to the various articles which are likely to be comprised in the food section of the Sale of Food and Drugs Act, and Mr. Wynter Blyth's work is one of this kind. Specialists in such departments as the analysis of milk will continue to write books on their speciality, and these, according to their value, will always have readers, but the general reference book will retain its place as one very frequently resorted to. The third edition of Mr. Blyth's "Foods" differs very slightly in arrangement

from the previous edition, but the text has undergone considerable alteration in some parts, and here we may specially mention the opening chapter, on the history of adulteration, as being one of great interest. This relates to adulteration in this country and in France and Germany. It describes the means which have been adopted since the fourteenth century to stop adulteration and sophistication of food-stuffs and drugs. We are reminded here of the practice once common in this country, of the periodical inspection of the druggist's stock, a practice still in existence on the Continent. In the second, or introductory part of the book, there are some valuable chapters on colour and colouring matters, in which the properties of these are described and a scheme for the detection of vegetable and artificial colouring matters, based on that of Professor Stein, is given. Under carbo-hydrates (part iii.) the various cereal and leguminous food-stuffs are treated, bread, jams, and other table delicacies also fall in here. The part following this, in which dairy products are treated, is one of the most valuable in the volume, special attention being given to milk and the factors which naturally influence its composition. The recent investigations by Klein and others on the possibility of milk acting as a means of spreading scarlet fever is succinctly given. Tea, coffee, and cocoa are the subject of the fifth part, and, as fate would have it, while the work was in the press the researches of Paul and Crownley on tea were completed and the results published, so that there is no mention of them in the book. Nor is there mention of the work of the same author on coffee, a knowledge of which must have considerably altered Mr. Blyth's chapter on coffee. Spirituous liquors, coliments, and water are also fully treated in the rest of the volume, which contains a large number of woodcuts of the microscopic characters of foods and their adulterants. The plan generally adopted is to give a description of each substance, prominence being given to the principal characters as distinguished from those of adulterants, then the best methods of analysis are described, and, when appropriate, important legal decisions are quoted. Throughout the volume there are many tables of analytical data which are of special value. The work is one of great value to analysts, amongst whom we can class many pharmacists who are called upon from time to time to advise clients as to the composition and value of food stuffs. To such we can commend this volume.

A Treatise on Alcohol, with Tables of Specific Gravities. By Thomas Stevenson, M.D. London: Gurney & Jackson, 1888. 16mo., pp. 24 + 73. 3s. 6d.

THIS is a second edition of Dr. Stevenson's book on spirit gravities, entirely rewritten, chiefly owing to Dr. Squibb's investigations on absolute alcohol. It is a small but useful book, the chief value of which lies in the tables, which give alcoholic strength (weight and volume) and proof-spirit strength of spirits from specific gravity '7938 (60° F. water at 60° F.) to '9999, each unit in the four places of decimals being noted. Although the book has been rewritten on account of Squibb's investigations, Squibb's real specific gravity of absolute alcohol ('7935) is not the basis of the tables, but Fowles', viz., '7938. But the author states that "if $\frac{1}{1000}$ be deducted from the figures in the second column the percentage of alcohol specific gravity '7938 [$\frac{1}{1000}$ '7935] will be obtained. Thus, spirit of '8228 specific gravity has in the second column 90 as its percentage of alcohol ('7938 specific gravity) and 90 - '09 = 89.91 is the percentage of alcohol of specific gravity '7935." This of course refers to the percentage of alcohol by weight, and the rule is suitable for most purposes; but it is only approximate, just as the figures in the second column are approximate, the figure in the fourth decimal place being the "5" or "0" nearest the actual figure. Dr. Stevenson gives the following rule for approximate corrections for variations in temperature between 55° and 68° F. for each 1° F. 60° F.

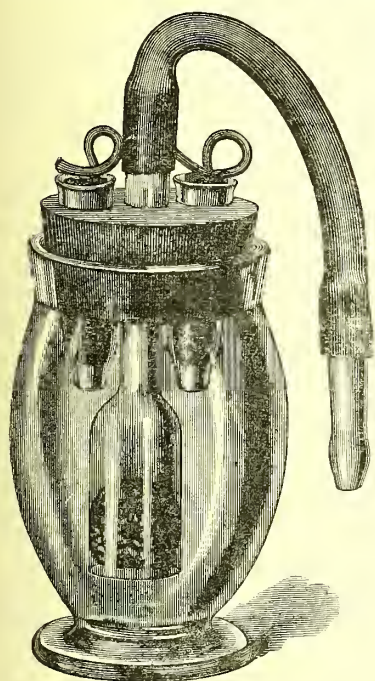
Alcohol, 5 to 15 per cent. by vol. add or deduct	'0001 to or from sp. gr.
" 15 " 25 " " " "	" '0002 " "
" 25 " 40 " " " "	" '0003 " "
" 40 " 70 " " " "	" '0004 " "
" above 70 " " " "	" '0005 " "

We have compared the tables with others, and the comparison shows that they are reliable for practical purposes.

Notes of Nobelties.

GODFREY'S CHLORIDE OF AMMONIUM INHALER.

ALTHOUGH Fuchs in 1804 used the vapour of ammonium chloride in the treatment of chronic catarrh of the respiratory organs, it is only within the past few years that the remedy has acquired marked reputation in the treatment of catarrhal affections of the mucous membranes of the ear, nose, and throat. A very essential part of the treatment is a suitable apparatus, and of those which have been designed for the purpose one which possesses undoubted merit for effectiveness and simplicity is that which is here figured, and which is made under a patent by the old-established firm of Godfrey & Cook, 30 Conduit Street, W. One distinguishing feature of this inhaler is that it contains no water,



while the hydrochloric acid and ammonia are so balanced that they neutralise each other in the formation of the chloride of ammonium. The inhaler consists essentially of three tubes passing through an indiarubber stopper which closes the inhaler bottle. Two of these tubes contain porous plugs, charged by dipping them into hydrochloric acid and solution of ammonia respectively, and the vapour formed by drawing air by means of the mouthpiece through these tubes is purified by passing through a damp sponge. The apparatus is well made and excellently finished. Each is packed in a cedar-wood box with two bottles of the liquids, the hydrochloric acid being in a green glass bottle, corresponding with the green glass acid-tube of the inhaler, so that the one who uses the apparatus is very unlikely to make mistake in charging it. We observe that the apparatus may also be used for insufflations and as a medicinal ejector of powders, &c.

LEE'S PATENT FEEDING-BOTTLE BRUSH.

WE have received a specimen of this new feeding-bottle brush which Messrs. S. Maw, Son & Thompson, as wholesale agents, are introducing to the trade. It is a combination of three brushes, one in the centre to clean the bottom corners,

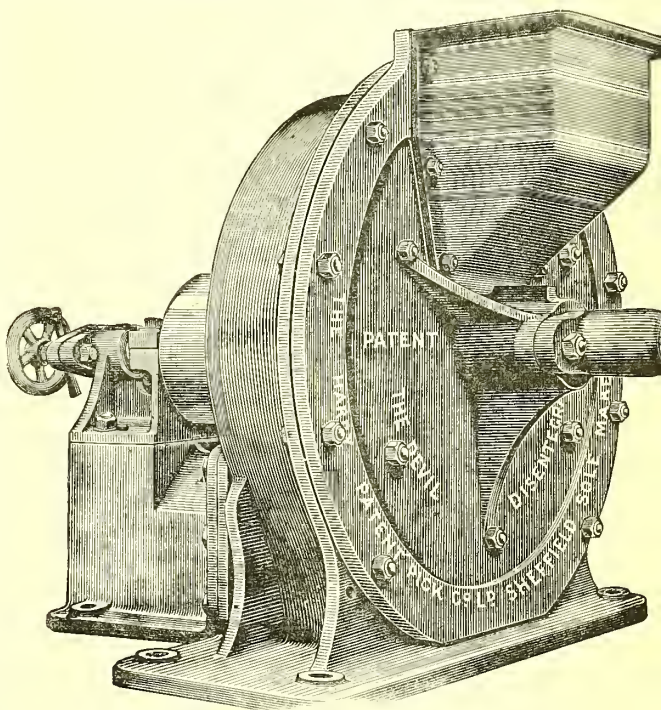
and two at the sides for the other surfaces. The side brushes are placed at right angles and are springed in a simple manner, so that they press upon the glass with sufficient force to remove all adhering matter. This special arrangement of brushes, combined with a long handle, facilitates the process of cleaning both as regards time and simplicity.

THE "SILVER CHURN" ESSENCE OF RENNET.

MESSRS. OLDFIELD, PATTINSON & Co, of Manchester, have added to their "Silver Churn" specialties a new essence of rennet which is put up in small bottles for retailing at popular prices. The bottles are neatly capsuled and labelled. We have tried the rennet, and find that it is more than capable of doing what it is said to do, viz. that a dessertspoonful will curdle a quart of milk. Half of this is quite sufficient, we find, and if attention is paid to the directions there is little chance of disappointment—so often experienced in making curds and junket. For cheese-making, one tablespoonful of the preparation is sufficient to curdle about twenty-five gallons of milk. The makers also supply it in 1, 2, and 4 gallon bottles and casks. It is likely to be a favourite with housewives.

THE "DEVIL" DISINTEGRATOR.

THE name selected for this new mill is indicative of the power of the machine, which is made by the Hardy Patent Pick Company, of Sheffield, and is intended for the reduction of hard material to powder, soft material to pulp, or tough material to shreds. The machine differs from all other mills in the ingenious utilisation of centrifugal force.



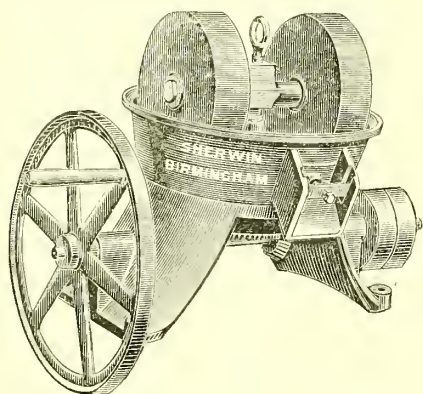
It consists of two discs—diameter 19½ inches to 38 inches according to size of machine—one of which is stationary and the other driven by means of a belt and axle at a rate of 800 to 1,000 revolutions per minute. Each disc has on its inner surface a number of teeth, sharp or blunt according to nature of material operated on, arranged in circles, the teeth in the outer circles being very fine, those of the inner

large and far apart. The teeth of the revolving disc pass between those of the stationary. The hopper for feeding communicates with the space in the centre of the discs; hence the material passes from the centre outwards impelled by centrifugal force. It meets with its first blow from the large teeth of the inner circle, and as it passes outwards becomes further reduced by each successive circle, until it reaches the receiver in the required condition. The marvellous adaptability of the mechanism is well shown by the fact that the same discs may be made to crack and break the skins off dried beans or to grind barytes to a fine powder, the necessary adaptation being effected by turning a screw which can be worked while the machine is at its highest speed.

We have seen specimens of coal, barytes, lead ore, bones hoofs, rags, and even rope, which had been submitted to its action, all with excellent results. As to its pharmaceutical applications we may say that gentian root can be bruised just enough for exhaustion while moist, thus obviating loss of aroma in drying. This is the direction in which the disintegrator will prove invaluable to druggists, the remarkable thing being that, however moist or soft the material, the machine never clogs. The small machine is the one which is likely to suit the trade generally. About four horse power is required to get full work from this size, but if less power is used the only difference is in the rate of output.

"SHERWIN" PAN AND ROLLER MILL.

OUR illustration is copied from a photograph of a very neatly designed pan and roller mill made a short time since for a well-known Birmingham firm of chemists by Mr. Geo. E. Sherwin, of 192 Alamea Street, Birmingham. The rollers are turned all over, and the spindle carrying them has a



square hole up the centre, which loosely fits on the vertical spindle driven by the gear wheels, thus permitting the rollers and spindle being readily lifted out of the pan, for cleaning purposes, without undoing a single screw. The horizontal spindle seen in the base of the mill under the pan is provided with a fly-wheel and handle at one end, fast and loose pulleys at other end, so that the mill can be driven either by hand or steam power. The gear wheels are entirely protected, and are very powerful, the scraper also being of a novel design. The best proof of the utility of the mill is that the firm for which it was made is satisfied with its work.

CAMPBOR is the latest disinfecting material for urinals, and it appears to answer the purpose admirably. None of those who use it appear to be aware that the small blocks last longer than the rough pieces of the "bell."

THE ITALIAN EXHIBITION.

FIRST NOTICE.

THE Italian Exhibition in London was formally deared open by the Lord Mayor on May 12; but, though has officially launched upon what promises to be a most successful career, its promoters have not violated the unwritten law that no exhibition shall ever be in proper shape until at least a month after its official inauguration.

The Exhibition occupies the same site as the American show of last year, and its active management is in the hands of the gentleman who so successfully floated the latter concern. But, although as yet in a chrysalis state, the Italian Exhibition promises, from a business point of view, to be incomparably more interesting and useful than its predecessor; and even the absence of the well-puffed H. B. Bill may perhaps be forgotten in the entertainment provided by the Italian Marionetti, the Borghese gardens, the marketplace, and other reproductions of Italian life and scenery. The imitation of the famous blue grotto of Capri, were compelled to say, somewhat of a burlesque or a libel on the original, though it affords a good deal of satisfaction to the spectators, while the excitement of the switchback railway is considerably enhanced by its surroundings of towering Alps realistically painted in azure blue on gigantic frames of canvas.

The central Exhibition building—in which the decorative industries, musical instruments, furniture, and other sections, together with an excellent art gallery, are lodged—is already in a tolerably advanced state; but the annex, erected at the other end of the grounds, in which the section devoted to pharmaceutical and chemical products, applied chemistry, oils (fixed and essential) and allied products is quartered, remains as yet in a state of perfect chaos, although it is announced that this section will be opened next week. A cursory inspection of this part of the Exhibition proved, however, that very few cases were yet unpacked. Among the three or four stands in a more or less advanced condition is that of Carlo Elba of Milan, the great firm whose senior partner died the other day. This house exhibits several pharmaceutical specialties, such as iodide of potassium, antifebrin, lactic acid, &c., as well as Italian pressed castor oil, extract of Italian belladonna leaves, and other products of its manufacture. Stano Frecceri, court perfumer, of Genoa, has an attractive case of scented waters, his specialties being concentrated rose water and essential oil of violets. Mr. Zambelletti, a Milan manufacturing chemist, is also in readiness with a full stand of preparations of soluble arseniate of iron, only dispensed in pill form, in 5 gramme doses. This firm, in the excellent manner in which its English labels are grouped, appears particularly desirous of opening up a trade with this country. The Fabbrica Lombarda di Prodotti Chimici, as befits its position of premier chemical works in Italy, has a magnificent stand in this section, but unfortunately the contents are as yet hidden from view by a green curtain.

Altogether seventy-nine Italian firms will show their goods in the sixth or pharmaceutical section of the Exhibition, and when ready it will in all probability convey a very fair idea of the position of the kingdom in this branch of industry. Essential oils are exhibited by fourteen firms, and the principal brands of liquorice are also represented, though for no apparent reason this latter article is classed occasionally among the pharmaceuticals and sometimes among the wines and liqueurs. The olive oil industry is, of course, very prominently represented; but it seems that many firms in such important sections as soaps, tartaric and citric acid materials and their derivatives, borates, &c., are wanting. Italian mineral waters are shown in a pretty good selection, and there is also an exhibit from the Italian quicksilver mines.

A short review of the Italian chemical and pharmaceutical industries is attached to the official catalogue. It (the review) is copied, in pidgin English and all, from the catalogue of Italian exporters upon which we commenced some time ago, and it does not materially add to our knowledge of this department. It is said that Italy's foreign trade is capable of extraordinary expansion, although its growth is interfered with by the protective policy adopted

by the country. In density of population per square mile Italy is only exceeded in Europe by Belgium, Holland, and the United Kingdom, these countries counting respectively 487, 315, and 288 inhabitants per square mile, while Italy averages 257. Her thirty million people, however, only exported goods to the total value of 40,838,000*l.* in 1886, and imported in the same year 58,185,000*l.* worth, an entire foreign trade of not quite 66*s.* per head. France, Germany, the United Kingdom, and Austria are the principal nations with whom Italy deals, but her commerce with this country has not been very prosperous lately. It is hoped that the rupture of Italy's commercial relations with France, her best customer, and the Exhibition now opened may contribute to increase materially the volume of Great Britain's trade with the southern kingdom.

ANGLO-DANISH EXHIBITION.

NO doubt this Exhibition will be a great success. It contains something to see and something to sell; as much of the picturesque features of Scandinavian scenery as it is possible for canvas and plaster to portray; a Danish village is here inhabited by peasants from Amagerland, "dressed in their picturesque national costume"; the patient stands by the smithy; near by are the tortuous trail of the switchback railway and the path of the toboggan; Hamlet's grave and Ophelia's well, dining galleries, tea-rooms, and the irrepressible bar where cocktails and corpse-revivers are served in American style. Here are the minimum of the Danish and the maximum of everything else, all for a charitable object—the benefit of the British Home for Incurables, which happens to be the first institution to receive the patronage of the Princess of Wales, who opened the Exhibition on Tuesday.

In calling the show an "exhibition" the originators have, to a large extent, traded upon the reputation of the organisations which have preceded it these past four summers at the well-known grounds, South Kensington. This is perhaps excusable for the reason that the object is a charitable one. The British Home for Incurables was founded on July 20, 1861, and has its quarters at Clapham Rise, one of the healthiest localities of the metropolis. The lease of the premises there expires in a short time, and it was with the view of getting the wherewithal for the erection of a new building that the originators of the Exhibition resolved upon celebrating the silver wedding of our Danish princess and promoting the interests of the charity in one scheme. What object could be more deserving than this? When the Home was founded in 1861 the annual death-rate from the three incurable diseases—cancer, dropsy, and tubercular affections—was 80,000, and since then the number has certainly not decreased. The amount of hopeless suffering which these figures imply is something appalling, and to relieve a little of it the Home shelters a large number of in-patients, and believes the wants of many out-patients by annuities of 20*l.* each.

The Exhibition occupies part of the Exhibition grounds, including the gardens, conservatory, &c., immediately behind the site of the Imperial Institute. The exhibits proper are confined to the east and west arcades and the east and west quadrants. Amongst the exhibitors in the east quadrant are:—Messrs. Hinde Bros., who make a varied and attractive exhibit of their "Danish Patent Brushes," wire brushes, &c. The Natural Seltzer Water Company, of Sleaford, exhibit the Taley Abbey seltzer water, which is said to be derived from the only seltzer-water spring in the British Isles. The water contains, according to Professor Attfield, about 78 grains of solids per gallon, chiefly chloride and sulphate of soda, and 14.44 cubic inches of dissolved gases per gallon. In the stand of Mr. Bowden, of 29 Finsbury Pavement, E.C., Lobbs's Anti-Tannic Infusers are shown, as well as various Indian condiments and Indian essential oils, such as sandalwood, cajuput, ginger-grass, citronella, and camphor. With the exception of cajuput, these oils are put up in long narrow bottles holding about 2 drachms, and there is quite a big sale of them at 1*s.* 6*d.* each. This is certainly a more profitable way of selling natural camphor oil than druggists have adopted, and it shows what an odd bottle, a neat label, a tidy box, and the all-powerful word "Indian" may do.

The most pretentious exhibit in the east quadrant is that of Burroughs, Wellcome & Co., consisting of a stall constructed of the carved wood from the Indian Court of last year's exhibition, a handsome cherry wood show-case, and the silver fountain, from the American Exhibition, which renders the quadrant odorless with Lundborg's perfumes. The firm's exhibits here are entirely of the toilet class, and comprise Murray & Lanman's Florida Water, Colgate's Cashmere Bouquet soap and perfumes, Lundborg's perfumes, and lanoline preparations. The Indian stall is a sale-stall, the proceeds from which are to be handed over to the Home by the firm. In the same quadrant Mr. Hickisson, of Crystal Palace Marking Ink fame, is in evidence, and Henry's Great Indian Remedies occupy a prominent position. Rather a curious filter is to be noticed here. It is known as Barstow's Patent Combination filter. The peculiarity of it is that the filtering media are (1) old red sandstone and (2) ordinary animal charcoal in small pieces. The stone removes suspended matter and cools the water, and the charcoal does the rest in an exceptionally efficient manner. The Crown Perfumery Company have one of the largest stalls in this part of the Exhibition, at which their specialties are displayed with good effect—the new Crab-apple Blossom perfume occupying a prominent place. With the exception of the exhibits of E. Rimmel and the Salutaris Water Company there is little in the west quadrant above the level of bazaar goods. The Salutaris Water Company have a nice alcove devoted to their aerated distilled water, and Londoners must be horrified when they look upon the retort residues and try to calculate how much of that stuff they have swallowed in their lives. In the west arcade the Silicated Carbon Filter Company's was the only exhibit fairly in position when our representative took his walk over, and from many a filter on that stand tiny streams of crystal-clear water were trickling in the cool shade. All the aerated waters sold in the establishment come from Idris & Co.'s factory. On the whole a very pleasant afternoon or evening can be spent in the "Exhibition," and during the summer months it will doubtless be a place of common resort.

NEW COMPANIES.

WEBSTER WOOD-FIBRE PACKING COMPANY (LIMITED).—Capital, 5,000*l.* in 14 shares. Object, to acquire and carry on the business of Joseph Manch Webster, Church View, Bootle, Lancs.

THE MARSDEN CHEMICAL COMPANY (LIMITED).—Capital 25,000*l.*, in 10*l.* shares. Object, to manufacture pulp for paper-making. Mr. James Tennant, chemical manufacturer, Saltwell, Gateshead, is one of the first subscribers.

THE ANGLO-AMERICAN OIL COMPANY (LIMITED).—Capital, 500,000*l.* in 20*l.* shares. Object, to deal in petroleum and shale products, oils, paints, varnish, glue, acids, and similar substances. The first subscribers are three New York merchants, three London clerks, and a London agent.

LEECH, NEALE & Co. (LIMITED).—Capital, 60,000*l.* in 20*l.* shares, none offered to the public. Object, to acquire the old-established business of Leach, Neale & Co., colour manufacturers, and premises in City Road, Derby, and at Spondon. The first subscribers are Mr. Charles Leech, Duffield Road, Derby; Mr. Thomas Neale, Highfield Road, Derby; Mr. Oliver Morgan Lilly, Spondon; Mr. Henry Staples, Spondon; Mr. Chas. Schwind, Morley; Mr. Sidney William Leech, Duffield Road, Derby; and Mr. Oliver Hutchinson Lilly, Spondon.

THE UNITED SOAP AND PERFUMERY MANUFACTURERS (LIMITED).—Capital 30,000*l.*, divided into 30,000 shares of 1*l.* each. Object, to carry on the trade or business of soap boilers and manufacturers, fat melters and boilers, perfume manufacturers, candle manufacturers, oil and tallow merchants and refiners, &c. The first subscribers are:—T. J. Laroche, soap manufacturer, 18 Paradise Street, Lambeth; H. de Laspee, soap manufacturer, 18 Paradise Street, Lambeth; F. King, accountant, Leadenhall Buildings, E.C.; G. Stevenson, solicitor, 67 St. George's Square, S.W.; E. L. Chapman, clerk, 133 Vauxhall Bridge Road; H. J. Barclay, tea dealer, 30 Trinity Square, E.C.; H. E. Fuller, engineer, 1 Leadenhall Street, E.C.

Gazette.

PARTNERSHIPS DISSOLVED.

Chapman, J., & Co., Norwich, vendors of patent medicines.

Thorniley, G. H., Harrison, W. T., and Leigh, A. J. T. (under the style of the Manchester Yeast Company), Manchester, yeast manufacturers, as far as regards H. Thorniley.

THE BANKRUPTCY (DISCHARGE AND CLOSURE) ACT, 1887.

ORDER MADE ON APPLICATION FOR DISCHARGE.

Taylor, William, Liverpool, general produce and petroleum broker—discharge suspended for two years.

APPLICATION FOR DEBTOR'S DISCHARGE.

Hadwen, William (trading as J. Moorhouse & Co.), Fairfield and Hulme, Manchester, mineral water, cordial, and vinegar manufacturer—June 11, Salford.

THE BANKRUPTCY ACT, 1883.

RECEIVING ORDERS.

Dixon, Henry Benjamin, Hanley, chemist.

Hammond, Benjamin, St. Leonard's-on-Sea, dental surgeon.

Smith, Frank Paul (trading as John Smith & Son), Greystonedale, Haltwhistle, Northumberland, varnish manufacturer.

The following amended notice is substituted for that published in the *London Gazette* of May 8:—

Wood, John, Oldham, wholesale druggist.

FIRST MEETINGS AND PUBLIC EXAMINATIONS.

Dixon, Henry Benjamin, Hanley, chemist—May 18, Royal Hotel, Crewe; June 1, Town Hall, Hanley.

Forrester, Thomas, Chorley, Lancashire, dyewood miller—May 18, Official Receiver's Office, Manchester; June 4, County Court, Bolton.

Hammond, Benjamin, St. Leonard's-on-Sea, dental surgeon—May 22, County Court office, Hastings; May 28, Town Hall, Hastings.

Smith, Frank Paul (trading as John Smith & Son), Greystonedale, Haltwhistle, Northumberland, varnish manufacturer—May 22, Official Receiver's offices, Carlisle; May 22, Court House, Carlisle.

Wood, John, Oldham, wholesale druggist—May 22, Official Receiver's offices, Oldham; June 19, Town Hall, Oldham.

ADJUDICATIONS.

Dobson, George, Leicester, chemist.

Smith, Frank Paul (trading as John Smith & Son), Greystonedale, Haltwhistle, Northumberland, varnish manufacturer.

NOTICE OF DIVIDEND.

Ralph, Philip, Hereford and Holmer, chemist and druggist and farmer—first div. of 2s. 6d., May 15, Official Receiver's office, Hereford.

ORDERS MADE ON APPLICATIONS FOR DISCHARGE.

Denman, Francis Philip, Burdett Road, Limehouse, Bow Common Lane, and Duckett Street, Mile End Road, formerly of Edinburgh, Glasgow, Paulet Road, Brixton, and Elgin Crescent, Bayswater, physician, surgeon, and accoucheur—discharge granted.

Thomae, Frederick (trading as Frederick Thomae & Co.), Crouch Hall Road, Hornsey, and Mincing Lane, and Mark Lane, London, late of Hornsey Lane, merchant—discharge suspended for three years.

FAILURES AND BANKRUPTCY REPORTS.

Re WILLIAM HENRY ILEY, Main Street, Old Shildon, Durham, Chemist and Druggist.

THE bankrupt, who carried on business as a druggist and grocer at Old and New Shildon, was examined at the Durham Bankruptcy Court before Mr. W. Marshall, Registrar, on Tuesday. Only a dozen persons were present, in-

cluding officials and the press. The debtor swore a statement produced, and Mr. Longden read for upward of an hour a transcript of the shorthand notes of evidence taken at the previous hearing, these notes undergo on some points some amendment. One correction was to the effect that co-operative stores, more than anything else, affected shopkeeping. After explaining the circumstances of an advance of 1,000*l.* by the bank, the debtor admitted that he had been paying old debts of a previous failure. He was examined by the Official Receiver at considerable length regarding various accounts, and ultimately the Receiver complained that everything was not produced as he had ordered, and he must ask the Registrar if it happened again to commit the debtor. He asked what quantity of goods left debtor's premises on March 2nd and 28th? Debtor: I cannot say. Receiver: You were there. Debtor said he was not, and he gave the names of those whom he had in charge of his shops. He also said the books would show what was wanted. Thomas Metcalfe would say as to Old Shildon; his son as to New Shildon. Metcalfe went out with goods on the night of his petition. Receiver: How many cartloads? Debtor: Oh! nothing like a cartload. Failing to obtain the required information, the Receiver said he should ask the Registrar to order a list of the quantities of goods sent out, and to whom they were sent, at the time referred to. The examination then closed.

LUDWIG KROLL, late of Mark Lane, Chemical Manufacturer.

ON Tuesday, in the London Bankruptcy Court, before Mr. C. J. Stewart, one of the assistant official receivers, the first meeting was held of the creditors of L. Kroll, who had carried on business at 69 and 70 Mark Lane, under the style of L. Kroll and Co., the British Hygienic Company. The accounts which have been filed showed liabilities expected to rank of 1549*l.*, and assets estimated to produce 574*l.* The debtor, in answer to the chairman, said he had no definite offer to make, but he was anxious to pay the creditors in full, and he believed that if time were allowed him, and he could carry on the business, he could pay them all by instalments. Mr. Bentwick, on behalf of several creditors, said their opinion was that it would be advisable to vest the estate in a trustee, and he had to nominate Mr. Manning for the post. The chairman pointed out that the stock was of a peculiar character, and would probably be very difficult to realise at anything like the value which had been put upon it. Mr. Fitch, one of the largest creditors, who, however, has a claim against a considerable portion of the machinery under a hiring agreement, said he was instructed by several accountants to offer 200*l.* for the estate, that sum, however, to include the amount due to him. The creditors generally held that this offer was very inadequate, seeing that the machinery, which cost 584*l.*, was only put down in the statement of accounts as likely to realise 250*l.*, and they decided to accept the offer. The matter was discussed at some length, and eventually the estate was left in the hands of the official receiver, and it will be advertised for sale at once.

E. H. BAYLEY, late of Stonefield Street, Islington, Medical Labeller.

THE first meeting of creditors under this failure was held at the London Bankruptcy Buildings, Lincoln's Inn Field on the 11th inst., under the presidency of Mr. Knollys, the deputy Official Receiver. The receiving order was made on April 17, and the accounts show unsecured creditors 156*l.* 0*s.* 1*d.* and a preferential claim for rent for 34*l.* 0*s.* 1*d.*, against assets consisting solely of book debts, which, however, were estimated to be of no value. The debtor stated that his furniture was seized in November last by the landlord for rent in arrear, and he is now living in furnished apartments at 61 New Dorset Street, Brighton. He made no offer, and there not being a quorum of creditors present no resolution was proposed, and the matter was left in the hands of the Official Receiver, who will wind up the estate due course. The public examination of the debtor will take place on the 30th May.

Trade Notes.

MESSRS. JENKIN & PHILLIPS, drug brokers, have removed from 51 Lime Street to 21 Mincing Lane.

MESSRS. G. VAN ABBOTT & SON, invalids' food manufacturers, have removed from 5 Princes Street, Cavendish Square, to 6 Duke Street Mansions, Grosvenor Square, a few doors from Oxford Street.

OWING to the Great Eastern Railway extension, Messrs. J. Beedler & Co. have vacated their premises situate 11 and 12 Bishopsgate Low Level, E. All orders intended for the firm should be sent to 18 Norton Folgate, E.C.

MESSRS. HOCKIN, WILSON & CO., wholesale druggists, &c., have removed from Duke Street, Manchester Square, W., to 13-16 New Inn Yard, Tottenham Court Road, W., and have fitted them up in an excellent manner, one of the features of the new premises being a large showroom for the exhibition of novelties.

It will be observed from a handsomely illustrated announcement made in this issue that the Charles A. Vogeler Company are introducing in this country a form of St. Jacob's Oil for veterinary purposes. The new speciality is characterised by a yellow wrapper, so that mistakes in the sale of either of the two preparations are not likely to occur.

MR. B. KÜHN, 36 St. Mary-at-Hill, E.C., as agent of the Fabbria Lombarda di Prodotti Chimici, Milan, has sent us a catalogue of the quinine salts and pharmaceutical preparations which the company are showing in the Italian Exhibition. The catalogue contains over 400 items, most of them being rare quinine derivatives and synthetical products. Those who visit the Exhibition should arm themselves with a copy of this neat pamphlet.

MESSRS. PEARS' latest contribution to artistic advertising is a reproduction of Sir John Millais's picture "Bubbles," which shows a pretty boy in sage green dress blowing soap-bubbles. The picture is in several forms: the street hoardings and exhibitions are placarded with an enlarged representation of it in a handsome antique frame. Chemists are to have the privilege of a framed copy of the picture, and reduced facsimiles of it are appearing in the magazines. The caricaturists have caught the outlines of the picture, and have perverted its spirit by showing in one journal Lord Wolseley blowing bubbles, while in another the boy's green dress has been filled with Mr. Gladstone blowing Home Rule bubbles.

Personalities.

MR. PHILIP A. KELLY has recently commenced business as a chemist at 31 Albert Road, Morice Town, Devonport, formerly a branch establishment.

MR. HORACE DAVENPORT, chairman of the Chemists' Aerated Waters Association, won the silver medal of the Guildford Golf Club at the spring meeting, and also carried off the silver club for the highest aggregate score.

MR. ATKINSON, of Stamford Street, Blackfriars, has taken from Mr. E. Wade the business hitherto carried on by the latter at 93 Chriss Street, Poplar. The transfer was effected through the agency of Mr. Parson C. Baker, of Stockbridge Terrace.

SOMETHING TO START WITH.—A lawyer told this story of another prominent Concord lawyer, now dead, the other day:—An old man was on the witness-stand, and was being cross-examined by the lawyer alluded to. "You say you are a doctor, sir." "Yes, sir; yes, sir." "What kind of a doctor?" "I makes 'intment, sir. I makes 'intment, sir. I makes 'intment." "What's your ointment good for?" "It's good to rub on the head to strengthen the mind." "What effect would it have if you were to rub some of it on my head?" "None at all, sir; none at all. We have to have something to start with."

BALLADE OF OLD REMEDIES.

WHERE are the remedies of old
That Cardan or that Celsus knew?
The Magisteries Salmon sold?
Herbs that in Gerarde's garden grew?
Where sage, or euphrasy, or rue?
Mandragera, or hellebore?—
The very names might turn one blue!—
Where are the remedies of yore?

Where's Mithridate? or where the bold
Bad messes Digby used to brew?
Where that elixir rare of gold
That Ripley "against Nature" drew?
Where *theriacæ* not a few?
"Brewits," and broths, and baths galore?
And things to lick, and things to chew?—
Where are the remedies of yore?

Where are the drinks to cure a scold?
Where each rejuvenating stew?
Decoctions hot, infusions cold,
Prepared with incantations due?
Alack, they all have vanished too!
The charm and periapt charm no more;
They're gone with Circe and her crew!—
Where are the remedies of yore?

L'Envoi.

Friend! see in this thy fate foretold.
O'er all thy pharmaceutic lore
The wave Lethean shall be rolled:—
Where are the remedies of yore?

C. C. B.

AT THE COUNTER.

Ivan (Lancashire) sends us orders he has had for "marcinawols" and "gulgumaca," the interpretations of which are sufficiently obvious.

A subscriber in North Queensland gives us this specimen of counter-prescribing in that region (temperature 98° in the shade):—

Chemist to Kanaka, giving him a bottle of medicine: You got white-fellow tablespoon?

Kanaka: H'm (yes).

Chemist: Take white-fellow tablespoonful three times (chemist holding three fingers up).

Kanaka (Polynesian) departs with the mysterious bottle.

Attraction (Kent) sends us the following:—

Old lady to female patient in chemist's shop, waiting for a mixture to be dispensed for chronic abscesses in face: "My dear, don't take any medicine, but go and lay your face on a newly-made male's grave at five o'clock in the morning, at the churchyard."

Query—Is the grave or male to be newly made?

CREATING A DEMAND.—A well-dressed lady, who says she has "come to reside in the neighbourhood," asks for a quite new infants' food, on which, however (notwithstanding its recent introduction), she has "brought up all her children." She will call again in a few days; but of course does not reappear.

THE CO-OPERATIVE SYSTEM.—First wee lassie (to second ditto): "We've got anither bairn in oor hoose."

Second: "Whaur frae?"

First: "Oh, the doctor brocht it."

Second: "What wey did ye no get it oot the store. Ye wad hae got a dividend on't."

THE Russian Military Pharmacopœia is about to be revised by a commission appointed for the purpose, with the President of the Military Medical Academy of St. Petersburg, Dr. Sushchinski, as chairman.

Practical Notes and Formulae.

TO REMOVE ODOURS FROM THE HANDS.

THE disagreeable odour of drugs like asafoetida, &c., may be removed from the hands and utensils by rubbing thoroughly with fresh linseed meal.

REMOVING IRON MOULD.

To remove iron mould from linen soak the spots with a solution containing 1 grain of ferrocyanide of potassium and 1 drop of sulphuric acid in each ounce, then wash with soft water, and remove the stains, which will have become blue, with solution of potash.

A PAINT FOR BURNS, ETC.

FLUID extract of quebracho, according to a writer in *Arch. Med. Belges*, applied to a wound, burn, ulcer, or frost-bite, is more healing than iodoform. On evaporation the fluid extract leaves a tough adhesive brownish skin, under which healing goes on rapidly.

DUSTERS V. MEASURES.

A CORRESPONDENT of the *National Druggist* promulgates a theory regarding the apparent spontaneous disintegration of glass vessels. It is that ordinary dusters become covered with grains of sharp, fine sand, which cut the glass almost like a diamond, and unequal expansion of the glass by heat does the rest. The moral deduced from this is: Keep your dusters in a tight box or drawer, and shake them thoroughly before using.

TO CRYSTALLISE TINPLATE.

CRYSTALLISED TINPLATE is made as follows:—Place the tinplate, slightly heated, over a tub of water, and rub its surface with a sponge dipped in a liquid composed of 4 parts of nitric acid and 2 of water, containing 1 part of common salt or sal ammoniac in solution. When the crystalline spangles seem to be thoroughly brought out, the plate must be immersed in water, washed carefully, dried, and coated with a lacquer varnish, otherwise it loses its lustre in the air. If the whole surface is not plunged at once in cold water, but is partially cooled by sprinkling water on it, the crystallisation will be finely variegated with large and small figures.

CATTLE POWDER.

	Parts
Sodii sulphat. sicc.	400
„ chloridi	300
Sodæ bicarbonat.	100
Rad. gentiane	100

All to be coarsely powdered and mixed.

Directions for Use.—To a large animal give two tablespoonfuls, to a smaller, one tablespoonful, twice a day, in their drink.

Suitable as a stomachic and appetiser for all kinds of animals.

PULVIS VACCARUM.

(Cow or Milk Powder.)

	Parts
Placentarum lini	500
Sodii chloridi	100
„ sulphurat.	100
„ bicarbonat.	50
Herbæ trifolii fibrini	100
Fructus fœniculi	100
Radici gentiane	50

To be coarsely powdered and mixed.

Directions for Use.—Two tablespoonfuls to be given three times a day, in a warm cow's drink.—*Dieterich's Manual.*

MURRAY'S SPECIFIC.

AN analysis of this celebrated specific for rheumatism, by the *Schweizer Wochenschr.*, is as follows:—

Sulphate of magnesia	26 grammes
Tincture of capsicum	10 „
Water	130 „
Tincture of cochineal	q.s.

RED MARKING INK.

THIS is prepared in the following manner:—One part of chloride of gold, or, better, chloride of gold and soda, is dissolved in 10 parts of water, and when the solution is to be used, a small portion of it is mixed, just previous to being employed, with an equal quantity of mucilage. Quill pens are used for writing, and the fabric is to be previously mordanted with a solution of 1 part of stannous chloride and 10 parts of gum arabic in 100 parts of water, then dried and ironed. After the ink has been applied, the fabric is exposed to a gentle heat, and after the writing has assumed a handsome red colour, the place is repeatedly washed with water.—*Amer. Drugg.*

APPLICATION FOR SORE NIPPLES.

THE nipples should be cleaned with a little warm water, to which has been added a small amount of borax, before applying:—

Balsam Peru	1 drachm
Tinct. arnicæ	1 „
Ol. amygdalæ	1 oz.
Aquæ calcis	1 „

M. Sig.: Shake well and apply to the nipples with a camel's-hair brush.

MAGNOLIA BALM.

A REPETITION of the analysis of Hager and F. M. Crke has been made by the analyst of *New Idea*, and he reports that the balm consists of zinc oxide (coloured with carmine) in suspension in a little diluted glycerine, and perfumed with oil of bergamot, oil of lemon, and perhaps one other oil. The following formula makes a preparation substantially the same as the proprietary article:—

Zinc oxide	4 drachms
Glycerine	1½ fl. oz.
Water	2 „
Carminæ	1 grain
Oil bergamot	1 minim
Oil lemon	1 „

POWDERED CAMPHOR

is prevented from caking by the addition of 5 per cent of soft paraffin. Mr. J. N. England, who has found out the wrinkle, says (*Amer. Journ. Phar.*):—“On standing for a short time, moderate caking takes place, but no crystallisation ensues. If a lump be placed on the hand, and slight pressure applied, it readily breaks down into a fine, velvety powder. It is admirably adapted for general use in powders despite its caking tendency, and is especially applicable in the extemporaneous preparation of camphor ointments or camphoraceous suppositories. It might also be employed in the manufacture of camphor containing catarrh-snuff powders.”

EXTERNAL PREPARATIONS OF SALOL.

M. NICOT, in a note on the therapeutics of salol (*Louv. Remed.*), gives the following formulæ:—

Dusting Powder.—Equal parts of salol and starch flour.

Salol Pomade.—White vaseline, 30 grammes; salol, 24 grammes.

Collodion for Sore Nipples, Bed-sores, &c.—Salol and ether, of each 4 grammes. Make a solution and add 30 grammes of flexible collodion.

Liniment for Burns.—Olive oil, 60 grammes; salol, 10 grammes; lime water, 60 grammes.

Elixir Dentifrice.—Salol, 3 grammes; rectified spirit, 50 grammes; oil of anise and oil of geranium, of each 15 grammes; English oil of peppermint, 1 gramme.

HORSE POWDER.

	Parts
Antim. nig. pulv.	20
Sulphur. sublim.	40
Rad. carlinæ, in gross. pulv.	40
„ asari Europ.	60
Rhiz. calami	60
Bacc. lauri	60
Sem. fenugreci	100
Lini (sine oleo)	100
Rad. gentiane	120
Sodæ sulphat.	400

Mix well.



[The notices hitherto sent by the Patent Office to applicants for patents, reminding them of the date for filing a complete specification, will not in future be issued.]

The following applications for Patents have been registered at the Patent Office.

Abdominal Belt.—5,996.—April 23, 1888.—Q. Haanen. An automatic abdominal belt.

Alkalies and Phenol.—4,843.—March 31, 1888.—W. W. Staveley. Manufacture of carbonates, sulphites, hyposulphites of the alkalis, or of calcium, and also of phenol.

Antiseptics.—5,451.—April 12, 1888.—W. Black and W. L. Reynoldson. Preparation of antiseptics.

Beverages.—4,969.—April 3, 1888.—L. Puech. A beverage prepared from oranges.—4,974.—April 3, 1888.—J. H. Kendall. Producing non-intoxicating beers, wines, and cordials by means of tablets or lozenges.—5,235.—April 10, 1888.—H. Carter. Manufacture of a non-alcoholic drink or beverage.—5,723.—April 17, 1888.—W. Webster. Production of chalybeate waters by electrolytic action.

Cleaning Powder.—5,866.—April 20, 1888.—S. J. Payne. Powder for cleaning and polishing plate, paint, and similar substances.

Clinical Thermometer.—5,392.—April 11, 1888.—W. C. Pepps. Clinical thermometers.

Decoctions.—5,768.—April 13, 1888.—H. Salkeld. Pots for extracting decoctions.

Feeding-bottles.—6,176.—April 26, 1888.—E. Griffiths and J. W. Owen. Feeding-bottles.

Foot Rot.—6,130.—April 25, 1888.—K. Sando. Curing foot rot in sheep, and called "Permanent cure for foot rot."

Glycerine.—5,985.—April 21, 1888.—J. Lewkowitsch. Obtaining fatty acids and glycerine from fats and oils.

Hypodermic Syringes.—4,942.—April 3, 1888.—A. Dunbar. Hypodermic syringes.

Knife Polish.—5,631.—April 16, 1888.—J. Johnson. Powders for cleaning and disinfecting knives and other table utensils.

Milk Preservation.—5,341.—April 10, 1888.—W. H. F. Barbe and W. Benit. Preservation of milk and cream.

Nail-brushes.—4,991.—April 3, 1888.—G. H. Coursen. Nail-brushes.

Perfuming Paints.—5,878.—April 20, 1888.—The Belfast Paint and Colour Manufacturing Company (Thomas Fisher). An invention for perfuming their paint enamels, commonly known as "Woodstock" oxydised enamels, and to have the sole right of using perfumeries in enamelled paints generally.

Poison-bottle.—5,658.—April 17, 1888.—O. C. Holt. A safety poison-bottle.

Stamping.—6,117.—April 25, 1888.—James Hickisson, trading as Crystal Palace John Bond's Gold Medal Marking Ink. Application for endorsing, stamping, or transferring, printing, or marking two, three, four, or more colours by one impression.

Trusses.—5,842.—April 19, 1888.—W. Clarkson and W. C. Nicholls. Trusses.

Specifications recently published.

(Postage, 1*d.* each extra.)

1887.

1. A. Delhay. Caustic soda and potash. 6*d.*

3. T. T. Mathieson and J. Hawliczek. Carbonate of soda, &c. 11*d.*

6,582. P. Molyneux. Paint or coating. 4*d.*

13,839. A. G. Salamon. Treating benzoyl sulphonic imide. 6*d.*

5,953. A. Kern. Methylic ether of gallic acid, &c. 6*d.*

15,139. C. A. Frees. Artificial legs. 8*d.*

3,987. J. A. Bigsby. Gummy varnish. 4*d.*

7,376. F. Crane. (*Hale & Field.*) Lacquers and varnishes.

7,377. F. Crane. (*Hale.*) Varnishes. 6*d.*

7,583. M. Wedlake. Receptacle for toilet powders. 8*d.*

6,583. R. Hutchinson. Polishing powder. 4*d.*

7,504. P. G. W. Typke. Utilising bye products from phosphorus compounds. 6*d.*

7,766. M. Wilsen. Spinal braces. 6*d.*

10,892. T. C. Lovewell and J. Yonge. Stopper for poison-bottles. 6*d.*

11,343. E. Woodham and P. Ockenden. Feeding-bottles. 6*d.*

1888.

962. H. Salkeld. Pots for extracting decoctions. 8*d.*

1,641. A. Mudie. Applying oil, &c., to the scalp, &c. 8*d.*

1,772. P. Jensen. (*Allan.*) Medicated cigars. 6*d.*

The following Patents have become void through non-payment of renewal fees:—

1881.

43. A. Watt. Compound for washing and cleansing.

1883.

3,877. W. E. Gedge. Purifying, &c., alcoholic liquors.

3,884. W. Weldon. Phosphate of lime, &c.

3,960. E. K. Muspratt and another. Chlorate of potash.

4,079. W. Weldon. Chlorine.

4,083. B. J. B. Mills. Extracts of orchal.

4,107. S. Gamgee. Substitute for sponges.

4,201. J. Wetter. Anæsthetics.

4,264. C. Rumble and another. Glycerine.

4,327. E. M. Moore. Surgical belt and bed stay.

4,337. C. A. Allison. Sulphuric acid.

4,404. E. De Pass. Preservation of alimentary substances.

4,467. W. R. Lake. Solutions used in galvanic batteries.

4,555. A. Wells and another. Folding boxes.

4,852. T. Davis. Compressing, &c., packets of substances.

4,853. C. Pieper (Vorster and another). Solidifying liquid acids.

4,857. C. H. Butlin. Enemas.

5,473. A. P. Price. Oxide of zinc.

5,525. P. G. W. Typke, and another. Substitute for bisulphide of carbon.

5,605. W. Weldon. Soda.

5,655. E. Edwardes. (*Marquis.*) An abdominal belt.

5,761. W. E. Gedge. (*Glaser.*) Carbonate of ammonia.

5,868. W. Weldon. Manufacture of chlorine.

5,903. J. McCulloch and another. Obtaining oil.

5,954. W. Green. Treatment of mineral oils.

1884.

16. J. Hanson. Extracting ammonia.

71. J. Armstrong. Making extract of hops.

153. R. Stone. Cement.

202. B. Piffard. Microscopic slides.

221. D. Urquhart. Disinfecting compounds.

416. G. D. Macdougald. Storing, &c., chemicals.

434. J. Leedam. Compound for washing, &c.

542. E. A. Russell. Furniture polish, &c.

579. M. Williams. Drying oils.

775. G. Stoker.—Inhaling apparatus.

852. A. J. Shilton. Disinfectant.

1,095. T. Cank. Preventing "gapes" in winged game.

1,257. T. Briggs and another. Truss for rupture.

1,297. W. Kloen. Preparation of malt and tea.

1,472. F. Wirth. (*Giacosa.*) Alcoloides of quina

1,846. L. A. V. Pellegrin. Feeding-bottles

Trade Report.

Notice to Retail Buyers:—It should be remembered that the quotations in this section are invariably the lowest net cash prices actually paid for large quantities in bulk. In many cases allowances have to be added before ordinary prices can be ascertained. Frequently goods must be picked and sorted to suit the demands of the retail trade, causing much labour and the accumulation of rejections, not all of which are suitable, even for manufacturing purposes.

It should also be recollected that for many articles the range of quality is very wide.

42 CANNON STREET, E.C., May 17.

IT is said that business has been pretty brisk this week in many of those articles which are usually affected by the approach of summer, but, on the whole, no improvement is noticeable, and the market is now practically closed until the middle of next week. At the public sales this week very little animation has been shown, and the depreciation of most staple articles has made further progress. Among drugs proper, cardamoms and senna can be quoted a trifle dearer, and American oil of peppermint may also, perhaps, be included in this small category. Nux vomica and cascarilla remain very firm, while gamboge and gum benjamin have recovered a small part of the ground recently lost. Ergot of rye, calumba, ipecacuanha, musk, and rhubarb, however, are all lower, and bees'-wax, Honduras sarsaparilla, opium, and gum myrrh are also on the weak side. Among drysalteries the only noteworthy changes that have occurred are in shellac, which is again lower, and block gambier, which has advanced. Oils are mostly unchanged. Among chemicals quinine is again on the down grade, oxalic acid and chlorate of potash are lower, and quicksilver is also a trifle easier.

THE SOUDAN TRADE.—On Friday last a deputation of gentlemen interested in the affairs of the Soudan had an interview with the Prime Minister, upon whom they sought to impress the desirability that the British Government should support British merchants in their endeavours to restore the trade of the Soudan by procuring the opening of the Tribal Ports north and south of Suakin, with reasonable Customs dues, retaining a small naval force on the Soudan coast to afford protection to merchants established at the ports; and that merchants would not be interfered with by Egyptian authorities, so long as they confine themselves to legitimate trade. The Prime Minister, while expressing his sympathy with the object of the deputation, did not hold out much hope that the British Government could take any active steps to assist them to realise their wishes.

ACIDS.—A fair business is reported to have been done in Citric acid at 1s. 6½d. to 1s. 6¾d., and these quotations may still be said to hold good, although 1s. 7d. per lb. is also quoted. Oxalic acid remains extremely weak, and cannot be quoted above 3d. to 3½d. per lb. Tartaric remains steady, but without any appreciable alteration. English, 1s. 6¼d. to 1s. 6½d.; foreign, 1s. 5¾d. to 1s. 6d. per lb.

AMBERGRIS in good quality is extremely scarce, and is worth from 92s. 6d. to 95s. per oz. A few packages of ordinary quality were offered to-day, but remained unsold. The best was bought in at 40s. per oz., and a much less price would be accepted.

ANISE.—Russian very depressed at 18s. to 19s. per cwt. Star anise is again being brought forward, part of to-day's offerings being re-shipped from Germany. For good China 85s. per cwt. is asked, though 33 cases were nominally bought in at 90s. per cwt.

ANNATTO.—Lower prices would probably be accepted for Brazilian roll than were until recently insisted upon. At the auctions a small quantity was offered, but no sales were made. Eighteen bales good bright Ceylon seeds sold at 2d. to 2½d. per lb.

ALOES.—A somewhat larger quantity of Cape aloes than was shown at the last sales was offered to-day, but owners' views

are rather above those of the buyers, and nearly the whole was bought in, only 3 cases being sold: fairly good had 22s.; partly drossy, 21s. per cwt. Curaçao neglected, and only a few cases common coarse black sold at 21s. per cwt. 150 gourds catalogued as "Barbadoes," dark brown and very coarse, were bought in at 20s. per cwt., but 18s. was not obtainable. Of East Indian aloes several new parcels were offered at the auctions, but business remained very slack. Twenty boxes softish and rather dark, sold cheaply at 10s. per cwt. Soft red Zanzibar in skins realised 75s. per wt.

AMMONIA SALTS.—Carbonate neglected at 4d. per lb., less a discount. Sal ammoniac remains unaltered at 34s. for first, and 32s. for seconds. Sulphate firmer at 11l. 10s. in London, and 11l. 7s. 6d. on the Tyne.

ARGOL.—Ten bags from the Cape sold at 75s. per wt. for clean, but dusty, grey, and 72s. for very dusty red.

ARSENIC very firm at 12s. 9d. to 13s. per cwt. for white powder, and 24s. per cwt. for lump.

BALSAMS.—There is no actual alteration in the price of Copaiba, but the market is not so firm. Peru steady. It seems that another effort is being made to increase the price, but it does not meet with much response. Nominally 4s. 6d. per lb. is asked for good balsam. Tolu neglected, at offering at 1s. 4d. per lb., but less might be acceptable.

BLEACHING POWDER quiet at 8l. 10s. here and 7l. 0s. on the Tyne.

BORAX shows no change, 29l. to 30l. per ton bag still quoted for English.

BUCHU.—No change can be reported. Round leaves are plentiful, and offering at 2½d. to 3d. for yellowish, fairly good green. A yellow and stalky lot sold cheaply at 1½d. to 2d. per lb. Two bales small long green leaves were bought in at 8d. per lb. nominally.

CALUMBA.—A few lots sold at a considerable decline, viz., from 4s. to 5s. per cwt. There was a good supply of root of a slightly better standard than we have been accustomed to, but of the 583 packages offered only about one-sixth sold at 10s. to 10s. 6d. per cwt. for brown bold mixed dull and slightly wormy root for washing. For good medium to bold yellow mixed but slightly wormy root 22s. is asked, and 15s. for small ditto.

CAMPHOR remains firm at 77s. 6d. to 80s. per cwt. for crude Japan on the spot. Makers seem to expect that higher quotations will rule shortly as the consuming season is now beginning, and advices from the East are favourable for a further advance. Refined firm, English being quoted at 1s. 2d. per lb. for bells, although German may be had cheaper.

CANELLA ALBA.—Only 12 bales small palish but broken quill were offered, and bought in at 20s. per cwt.

CARDAMOMS.—The 168 cases offered met a very good demand, and were almost all sold at irregular rates, the first catalogue occasionally rather cheaper, but the subsequent ones at full rates to an advance of 2d. per lb. Malabar good pale plump, limited, at 3s. per lb.; a few lots rather small CCC sold at 2s. 1d. per lb.; the remainder, as well as a parcel MMM goods, is limited at 2s. 6d. to 2s. 9d. per lb. Mysore, fine bold pale, sold at 2s. 3d.; good smooth pale long at 1s. 10d.; good medium at 1s. 5d. to 1s. 7d.; small long pale at 1s. 3d. to 1s. 4d.; yellow and brown mixed, medium sized and specky, 1s. to 1s. 1d.; brown and dull, 11d. ordinary split and husks, 2d. per lb.; Ceylon Malabar, fair round yellow, 1s. 10d.; pale, small to medium, good appearance, 1s. 9d.; brownish, but heavy, 1s. 8d.; fair yellow, 1s. 6d.; small brownish, 1s. 4d.; very small, 1s. 2d.; Wild Ceylon, good bold, at 1s.; seeds at 1s. 2d. to 1s. 4d. per lb.

CASCARA SAGRADA seems to be giving way a little, and 60s. would now be accepted by all holders.

CASCARILLA.—We have recently received a much-anted consignment of this article, which was disposed of to-day at very full prices, hesitatingly paid. Good bright sound livery quill brought 40s. per cwt.; brown small mixed ditto 33s.; very small but partly silvery bark 30s. per cwt.

COCA LEAVES.—No good leaves are being offered at auction just now, but holders would be glad to dispose, almost at any price, of several lots of rubbish, for which

day they could not obtain an offer. Some packages discoloured and badly damaged Java leaves are also offered at per lb.

COCAINE steady at the recent quotations. There is no other news about the South American combination.

CINCHONA.—The usual assortment of South American barks and a few stray lots of East Indian cinchonas were offered at to-day's auctions. A parcel of 96 packages, partly but papery flat yellow *Calisaya*, partly bright corky *Cargena* remained unsold. *Huanoco* quill brought from 11d. to 3d. per lb., and a few serons genuine *Lora*, a variety which continues to command full prices, sold at 2s. 2d. per lb. One Java bark, long thin *Ledgeriana*, in slightly damaged lots, sold at 8d. per lb. The exports of cinchona from Yon in the periods between October 1 and April 19 have been: 1887-8, 6,033,597 lbs.; 1886-7, 8,495,414 lbs.; 1885-6, 8,596,774 lbs.

DREAM OF TARTAR keeps fairly steady at 121s. 6d. per cwt. for first white, and 118s. per cwt. for second quality.

FRUIT.—Only five bags good genuine, but small and slightly stalky mixed berries were shown. 25l. is asked for this.

GUM SEED.—Fair Bombay seed was offered to-day at 4s. per cwt., and for Malta 52s. 6d. would be accepted.

HUTCH firm. Privately sales are reported at 30s. 6d. to 32s. per cwt. for MM in tablets, and 32s. for "Flag BB" brand. At the public sales on Tuesday 700 boxes were all bought in up to 34s. for "W two Stars" brand.

DRAGON'S BLOOD remains very firm, holders not being inclined to relax their pretensions. Of 13 cases offered, 4 resold at 7l. for good red, but rather coarse-breaking bold out of teal, and 6l. 17s. 6d. for bright seedy saucers. A lot of very good bright saucers is held at 7l. 5s. *Socotra* dragon's blood all bought in, fair drop at 80s., dull, blocky and woody siftings at 45s. per cwt.

ERGOT OF RYE in good supply, which was readily bought, holders making concessions and accepting from 2d. to 3d. per lb. below the recent auction prices. Of 56 packages, the water part was sold: sound *Spanish* at 1s. 3d. to 1s. 4d., slightly wormy and thin 1s. to 1s. 1½d. An offer of 1s. per lb. for a very wormy sifted lot was refused. *Russian* sold at 10½d. for lean but sound, and 9½d. might have been obtained for ordinary wormy, but the owner stood out for 10d. per lb.

GAMBIER.—Block has made a further advance, 22s. 3d. per cwt., having been paid for spot at the end of last week's sale since that time owners have been able to obtain 22s. 6d. per cwt. At this figure a fair amount of business has been done, and there are now parties willing to pay 23s. 7½d. per cwt., but no sellers at that figure.

GAMBOGE.—A good inquiry at full prices prevails, and of 10 cases offered for sale only 2 were bought in. 11l. to 12s. 2s. 6d. was paid for very good-coloured broken pipe, 15s. for dull partly-drossy and cakey, and 9l. to 9l. 5s. for common dark and drossy pickings.

GLYCERINE.—The German agents still quote 70l. per ton for double-distilled s.g. 1.260.

GUM AMMONIACUM.—Five cases good pale but slightly dark siftings were bought in at 25s. per cwt., but 18s. was suggested as an acceptable figure.

GUM ARABIC.—*Australian* gum is in very good supply, and one exceptionally fine lot of bold pale frosty drop and from Adelaide was offered. A bid of 70s. was refused for this, and the parcel bought in at 85s. Medium to very old drop, partly woody, sold at 60s.; dark and glassy partly blocky drop was bought in at 70s. per cwt. A lot of good small pale glassy slightly dusty *Cape* gum brought 62s., and darker ditto went cheaply at 54s. to 57s. per cwt.

GUM BENJAMIN.—*Siam* gum is plentiful, but only one fair small blocky almonds sold, at 15l. 5s. per cwt. The remainder consisted almost entirely of ordinary blocky and dark grain. *Sumatra* sold briskly at 9l. 17s. 6d. for fine white bold almondly seconds; good pale but slightly false picked, 8l. 12s. 6d.; fair partly brown to good grey almondly thirds, 6l. to 6l. 15s. *Palembang*, ordinary reddish seconds sold at 58s. to 60s. per cwt.

GUM ELEMI.—Twenty boxes good pale strong-flavoured *Manila* were offered, and a bid of 29s. made for a lot, but 35s. is said to be the limit.

GUM KINO still depressed. Good gum bought in to-day at 32s. per cwt.

GUM MYRRH.—There is no demand; as our stock is accumulating, it is probable that lower prices would be taken. Dark to good pale Aden sorts were bought in to-day at 90s. to 92s. 6d., and good pale picked, nominally, at 140s., while dark siftings were offered at 40s. per cwt.

HONEY continues rather steady, but to-day very little was shown. Good brown liquid *Jamaica* sold at 25s. 6d.; a darker lot is obtainable at 25s. per cwt. Dull candied *Californian* bought in at 35s. per cwt.

IODINE firm at 9d. per oz., *Resublimed* at 13s. 6d. per lb., and *Iodide of potassium* at 11s. 3d. per lb.

IPECACUANHA.—A pretty considerable quantity, amounting altogether to forty-seven packages, was offered to-day, but lower prices only were obtainable, and the greater part was consequently bought in. What was disposed of sold at a decline of 3d. to 4d. per lb., as compared with the last auctions, sound partly thin *Rio* root bringing 6s. 2d., and damaged 5s. 6d. to 5s. 11d. per lb. Two packages *East Indian* ipecacuanha were also offered. They were imported from Singapore, and probably grown in the Jahore plantations. The root was of excellent appearance, though slightly damaged, and, if it corresponds with the previous consignment from Singapore, contains fully as large a percentage of emetine as the *East Indian* root. There were 114 lbs. of it, which sold at 6s. to 6s. 3d. per lb., according to the extent of damage.

JABORANDI LEAVES.—Four bales rather brownish but bold leaves sold without reserve at 4½d. per lb.

JALAP.—Several parcels were offered for sale to-day, and the inferior half was sold at steady prices, but showing no material advance. Good sound heavy *Vera Cruz* was bought in at 7d. per lb.; mixed tubers, partly mouldy and damaged, sold at 4½d. to 5½d. per lb.

MORPHIA.—The makers report a slightly brisker inquiry. It is also stated that the cheap second-hand parcels offering a few weeks ago have disappeared.

MUSK.—Further arrivals (4 packages) have taken place this week per *Chusan*, via Colombo. The assortment offered at to-day's auctions was not a very good one, nor was there much demand, and sales were effected with a good deal of difficulty. Prices were lower all round, though only very slightly for the best qualities; but ordinary pale I sold from 4s. to 4s. 6d., and third pile from 2s. to 2s. 6d. cheaper. 85s. per oz. was paid for good small to bold dry pods with top skin, 74s. for ordinary ditto, 44s. for good but adulterated third pile, 17s. to 18s. for very common dark and damp ditto. One caddy genuine but horny second pile sold at 36s., trimmings and empty skins from 8d. up to 4s. per oz.

NUX VOMICA.—At Calcutta, on April 24, there were only about 150 maunds in stock, and very little business was doing. At to-day's auctions several parcels which have recently arrived were offered, and the 368 bags catalogued were all sold at very steady prices, viz., 12s. to 13s. 3d. for good pale more or less silky Bombay, and 10s. to 11s. for fair but partly damaged seed from Ceylon.

OIL (CASTOR).—Several parcels were offered to-day, but all was bought in, the prices quoted at limits being: fine *Italian*, 4½d.; good first *Calcutta*, 4d.; yellow *Coconada*, 2½d. per lb.

OILS (ESSENTIAL).—*Star anise*: A new parcel unworked oil was offered to-day, and it appeared that 2 cases were sold at 6s. per lb., but there is no doubt that 5s. 11d. is a nearer quotation. *Cinnamon* oil, good strong pale, sold at 1s. 6d. per oz.; while for 15 cases *Cinnamon leaf* oil 1½d. per oz. is quoted. Fifteen cases of "Fisher's" *Citronella* oil were offered, but taken out without mention of price. There is very little demand for this oil at present, and native brands on the spot cannot be quoted above 1½d. per oz. The arrivals are very heavy, 1,100 cases, containing nearly 900,000 oz., having arrived per *Cambrian Duchess* this week. The exports from Ceylon from October 1 to April 19 were:

1887-8, 4,871,746 oz.; 1886-7, 4,916,928 oz. Italian oils are not in much demand, and *Bergamot* is quoted 6*l.* to 9*d.* per lb., lower in some quarters, but *Lemon* remains very firm. *Peppermint* oil rather firmer for American, 10*s.* 9*d.* per lb. being asked now for H.G.H. Japanese oil is offering at very low rates for ordinary brands, 4*s.* to 4*s.* 6*d.* being the limits for two parcels shown at to-day's auctions, but we hear that shippers in Japan offer 4,000 lbs. at 3*s.* to 3*s.* 3*d.* per lb. c.i.f. Six cases rather discoloured menthol crystals are held at 4*s.* per lb.

OIL (OLIVE).—On the spot there is no change, and owners still ask 33*l.* for *Mogadore*, 34*l.* for *Sicilian*, and 37*l.* for *Spanish* oil. Business dull. Large quantities of oil from the Neapolitan coast are being shipped to Sicily, and these supplies, thrown on the Messina market and pressed for sale, are quite demoralising the latter.

OIL (PETROLEUM).—Firm. *American* spot, 5½*d.* to 5¾*d.*; September-December, 5¼*d.* to 5½*d.*; *Russian*, 5¼*d.* to 5½*d.*, spot and September-December. Messrs. W. H. Samuel & Co., of Liverpool, reviewing the present position and future look-out of the article, state that the general position has not undergone any change recently, but, as another consuming season draws nearer, the various considerations or elements that govern the course of the market naturally assume a more definite form; but as yet they have not sufficiently developed to render it safe to venture upon a reliable prognostication as to the course of prices during the approaching season. The shut-down movement in America appears to continue successful, as is testified by the further decrease in production of stocks of crude oil, the latter at the end of March having fallen to 25,404,276 barrels, against 32,932,502 barrels at same time last year. Prices of refined oil, too, have not undergone any upward movement of late in America, while the unprecedentedly low rates of freight ruling have tended to keep the cost of importation at its lowest limit. The stocks of American refined oil in the principal European ports have also reached a very low point, the visible supply on May 1 not being sufficient even for two months' consumption. It will therefore be seen that the statistical position, as far as American petroleum is concerned, points undoubtedly to higher prices than ruled during the latter half of last year; but, on the other hand, if the available supply of Russian oil is much greater than the demand, prices will be forced down, notwithstanding the strong position of the American markets.

OPIMUM.—Our market remains exceedingly quiet, the last transactions reported including *Malatia* at 15*s.* and *Salonica* at 16*s.* per lb. *Persian* is very slack, and quoted at 12*s.* to 12*s.* 6*d.* per lb. On May 5 the Smyrna market closed weak, holders having accepted further reductions in price, viz., 8*s.* 6*d.* c.i.f. London for new Tale quale Karahissar, and 8*s.* 8*d.* c.i.f. for new and old Tale quale Yerli. There seems to be a good deal of anxiety on the part of holders to realise, and a further reduction in price would cause no surprise. All reports from the interior agree in prognosticating (subject to the continuation of favourable climatic conditions) an abundant harvest. The estimates, of course, differ; but it is very seldom that at this critical time of the season the optimists have it so entirely their own way as this year. The poppies in some districts commenced flowering at the end of April, which is exceptionally early. A Smyrna report reviews the situation on May 5 as follows:—"Estimates at present vary, according to the optimist or pessimist views taken by different parties, from 10,000 to 7,000 baskets. Generally speaking average estimates prove nearer the truth, but this year all estimates are, in our opinion, more or less at random, as the final outcome may exceed one way or the other the most impartial reckonings, because, owing to the scarcity of corn for sowing, a good deal more opium has been sown than usual, whilst on the other hand there has been damage of more or less importance done to the poppy plantations, especially in *Salonica*, *Malatia*, *Bogaditch*, and *Akshair*. The stock in first hands, which is calculated to amount to a total of 3,700 baskets, of which 900 are in Turkey, 1,700 in London, and 1,100 in America, is nearly as large as that existing at the corresponding period in 1886. If, therefore, the new crop should yield 8,000 baskets, we shall have about 12,000 cases of opium for 1888, a quantity more or less equal to that existing on July 1, 1886, and of sufficient importance to justify the expectation

of very low prices. We have received from Messrs. Barry & Co., of Smyrna, a letter, which will be found in our correspondence columns.

ORRIS ROOT.—At the auctions only 5 cwt. fairly good pale and bold second quality Italian root was offered. This lot sold cheaply at 25*s.* per cwt.

PATCHOULY LEAVES.—Twenty-seven bales rather brown leaves but without stalk and of a strong aroma were bought in at 8*d.* per lb., while 44 bales greenish leaves of cubital character and mouldy flavour were bought in at 2*d.* per lb.

QUICKSILVER.—There does not seem to be a quotation from the importer. Second-hand holders are weak, and offer at 6*l.* 15*s.* 6*d.* to 6*l.* 16*s.*

QUININE.—The advance in the price checked business towards the end of the week, operators not appearing to have enough confidence in the market to pay 1*s.* 6*d.* per oz. for German quinine in bulk. This distrust proved justified, for on Monday holders gave way and offered freely at 1*s.* 5*d.* to 1*s.* 5½*d.* per oz. Afterwards the Mannheim agents reported to have sold 10,000 oz. forward at 1*s.* 5*d.*, which is now the quotation for nearly all German brands, but 1*s.* 4½*d.* would certainly buy in second hand. The market is very lifeless. The imports of cinchona salts into the United States from July 1, 1887, to February 29, 1888 were 1,067,364 oz., against 1,319,438 oz. during the corresponding period of 1886-7. But more recently the imports have shown a much greater falling off, those from January 1 to April 30, 1888, being only 532,300 oz., against 916,326 oz. in the first four months of 1887.

RHUBARB.—With the exception of one fine lot, which sold at a full price, lower rates were again accepted, in many instances 4*d.* per lb. below the valuations. A considerable proportion of the 147 cases offered was disposed of: *ensi*, small round druggists' root for trimming, 1*s.* 10*d.* to 2*s.* 6*d.*; flat, medium to very bold fine appearance, and pinky fracture, only slightly mixed with dark, 3*s.* 7*d.*; medium to bold, three-fourths pinky grey fracture, partly horny, round 2*s.*; small to medium fair fracture, flat, 1*s.* 4*d.* to 1*s.* 5*d.* fair partly horny coat, good fracture, slightly spongy, round 1*s.* 2*d.* to 1*s.* 3*d.*; bold rough coated, round, 11*d.*; ornary rough flat pickings, 8*d.*; dull grey and common, don to 5*d.* per lb.

SARSAPARILLA without much change. No *grey Juinea* was offered, but 1 bale *red, native*, sold at 1*s.* 2*d.* *Holurus* very depressed, "Crown F.D." and "J.L. Truxillo," both in at 1*s.*—10*d.* being refused for the latter. Sixty-six bales common very chumpy *Mexican* bought in at 6*d.* for round, and 4*d.* for damaged. *Hemidesmus Indicus*: Two bales from Pondicherry, very good quality, were offered and sold 10*d.* per lb.

SCAMMONY.—The Smyrna market remains very firm indeed, with a stock amounting only to about 2 cwt. High prices are asked (up to 23*s.* 6*d.* per lb. for first quality, but even these are purely nominal, as holders are not willing to sell, although they could easily find buyers at these rates.

SENNA.—202 bales, nearly all second-hand, were offered to-day, and an unusually large proportion was bought, the remainder realising high prices, 5½*d.* to 6*d.* for *Tinnevel* good green leaf, 3½*d.* to 4½*d.* for medium ditto, 1½*d.* to 1*d.* for ordinary yellowish or thin damaged leaves, and down ¼*d.* per lb. for false-packed rubbish.

SENEGA.—Some lots sold a little cheaper to-day. Western root of good aroma and appearance is held at 1*s.* 7*d.* to 1*s.* 9*d.*, fair ditto sold without reserve at 1*s.* 7*d.*, small rusty damaged at 1*s.* 5*d.* per lb.

SHELLAC has continued to decline, and at the commencement of the week 400 chests *Second orange*, June-August shipment, sold on the basis of 40*s.* per cwt. c.i.f. terms, which is the lowest price on record. Since then, however, a better feeling has prevailed owing to cables from Calcutta reporting small shipments during the first half of May (3,800 cwt., of which 3,000 cwt. to the United Kingdom), and 41 cwt. c.i.f. was paid yesterday for TN June-August shipment. The auctions 1,350 chests were offered, of which nearly 1,000 sold: *Second orange* at a decline of 6*d.* to 1*s.* 6*d.*, the lower qualities

ng most; *button*, of which but little was offered, at steady
s; and AC garnet at a decline of 1s. per cwt.

EA.—In the *China* market trade still continues very quiet,
lers buying as little as possible and in some cases disposing
emnants of old stock in public sale. On Tuesday 12,136
kages (including 3,353 boxes) sold slowly. Kaisow from
to 4½d., with a suspicion of quality, showing wonderful
se and being worthy attention. One lot of common old
ings fetched 1½d. per lb., and fair new siftings 3½d.;
chong from 5½d. to 8½d., one lot of very common selling
¾d. per lb. on Wednesday. Common old caper fetched
and capers of the present season from 7d. to 10d. were
ap, in view of new teas on the way. So-called 1888-9
makes fetched 7¾d. to 11d. in public sale. The market
new Monings at Hankow (where the principal buying for
London market takes place) opened on the 12th inst., and
reported that the Ningchows and Oonfaas are good, but
mans are a bad crop. One Russian buyer is said to have
157 taels (about 2s. 6d.) for finest Ningchow. *Assams*
a very dull market. Prices cannot be quoted much lower
last week, but the indisposition to bid is very marked
public sale, though no large quantities are offering, and
y lots have been taken out. The market is "sick," and
lers, finding their customers do not like the present high
s, are reluctant to add to stock, but we do not anticipate
serious fall in prices as the quantity of Assam left is very
ageable. *Ceylons* are equally lifeless, but as the quality
borer the prices obtained are not so bad as would appear.
ly parcels are, however, being taken out to be kept for
er prices.

INQUIN BEANS.—Five cases *Surinam* character bold
k beans, newly imported, were bought in at 2s. 9d.,
½d. per lb. being refused. Of four cases chocolate Pará,
ly fox, one sold at 1s. 2d. per lb.

AX (BEES).—*Jamaica* lost a little of the advance paid
e last sales. Fine pale yellow sold to-day at 6l. 7s. 6d.;
orange and yellow, 6l. 5s.; orange, grey and red,
2s. 6d. to 5l. 15s.; grey and brown, 5l. 5s. per cwt.

THE GERMAN MARKET.

HAMBURG, May 15.

E last week has been a very quiet one, and a good many
articles are lower in value since the date of our most
nt report, while only a few have improved.

be prices in this column are given in marks (11¾d.) per
illos, or per kilo. (1 kilo. = 2 lb. 3½ oz.; 50¼ kilos. = 1 cwt.).
prices in parentheses show the parity in London.

LOES.—*Curaçao* have been sold at a fresh reduction.
ing the last few weeks a large quantity of old stock has
cleared off by holders, no doubt at a severe loss.

ALSAMS.—*Copaiba* remains steady at 5m. (5s. 10d.); but
article is reported somewhat easier in tone. *Peruvian*
ars to be looking up again. The price may now be
ed 8¾m. to 9m. (4s. to 4s. 2d. per lb.). *Tolu* without
and.

ARKS.—*Cinchona*: Of Portobello bark two lots of about
bales ex *Colonia* have been received. Fine qualities are
and command high figures, viz., 130m. to 140m. (6d.
b.) according to quality. Maracaibo bark has been sold
he very low price of 25m. (1¼d. per lb.). A small
pel of flat yellow Calisaya of very fine quality is offering
y at the extreme rate of 7m. (3s. 3d. per lb.). *Con-*
ango has attracted more attention during the last few
d, and prices must be quoted higher—4½m. to 5m.
aya: 1,000 lbs. were offered at 24m. to-day, a very low
; but the arrivals have been considerable lately, and it
d that further shipments are on the way.

ANTHARIDES.—Slightly higher prices are asked for
ian flies.

CAINE.—*Crude* is dearer; several parcels changed hands
im. per qrs.

ONEY.—*Chilian* very steady; about 800 barrels afloat
already been disposed of.

OILS (ESSENTIAL).—*Star anise* sold at the reduced price
of 13¾m. (6s. 3d. per lb.). *Cassia* is held at 6¾m. (3s. 3d.
per lb.). In *Peppermint* there is little alteration. American,
H. G. Hotchkiss, is to be had at 9¾m. to 10m. per lb. *Japan*
oil at 7m. to 7½m. per lb.

OIL (COD-LIVER).—Prices have been higher this week,
62¾m. to 65m. per barrel being quoted for the best steam-
refined oil. No Finnmarken oil has yet been received.

ROOTS.—*Senega* is considerably lower in price; 3.60m. is
quoted for good western root. *Sarsaparilla*.—Mexican
cheaper; only 65m. could be obtained for some good root
just imported from Tampico. *Jalap*.—The renewed demand
in America has caused holders here to show more firmness,
but there is no business doing worth speaking of. *Galangal*
is in excessive supply, several thousand bags having arrived;
second hands are quoted 14½m. to 16m., according to
quality.

WAX.—For *Carnauba* a better feeling prevails in the
market, and 600 packages have changed hands at 70m. to
105m., according to quality.

CHEMICALS IN THE NORTH OF ENGLAND.

OUR market shows no signs of any improvement, and the
orders coming in are of a limited character, while stocks
are accumulating. The American tariff is still under discus-
sion, but it is doubted here whether several articles which
it is proposed to add to the free list will ever be placed there.
The new tariff is suggested as a means of reducing surplus
revenue, but some articles now put on the free list have not
paid any duty for years, simply because the duty was prohibi-
tory, and if they are allowed in for the future duty free they
will not make any change in the receipts.

ACIDS.—*Tartaric* is steady at 1s. 6d. per lb., and the
reports from the works all speak of more activity. *Citric*
firm at 1s. 7d.; but *Oxalic* is neglected at 3d. per lb. *Boracic*
is weaker, the late efforts to make sales being unsuccessful,
and 26s. 6d. would now be accepted for forward delivery.

AMMONIA SALTS.—*Sal ammoniac* is selling more freely at
34s. for first, and 32s. per cwt. for second quality. *Muriate*
very steady at 26l. to 31l. per ton, according to quality.
Carbonate moving off at 3d., and *Sulphate* has again im-
proved, the market closing at 11l. 7s. 6d. to 11l. 10s.
per ton.

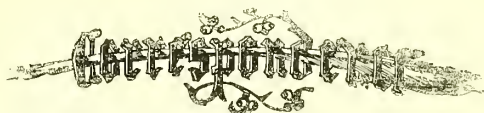
BLEACHING POWDER has met with a very limited demand
during the past weeks, and values are easier in all positions,
quotations being, on rails, 7l. 6s. 3d., and f.o.b. 7l. 10s. to
7l. 11s. 3d. per ton.

BORAX is steady but quiet at 30l. per ton for English
refined. The position of Californian is somewhat contradic-
tory, for the market appears to be firmer in San Francisco
than in New York, where holders are rather anxious to
reduce their stocks, although offers made to them have not,
so far, resulted in business.

METAL BASES.—*Sulphate of copper* has been neglected,
and holders are pressing for orders at 20l. 15s. to 21l. per ton.
Green copperas.—The old quality of Lancashire make is
being largely affected by the large supplies of Welsh from
the tinplate works, and values range from 32s. 6d. to 35s. 6d.
per ton. *Sugars of lead*.—These are all on the decline, the
Germans offering forward at lower prices. For prompt the
quotations are—White 27s., and brown 21s. per cwt.

POTASH SALTS.—*Prussiate* is again easier, German makers
pressing for orders, and nearest values are 6¾d. to 6¾d. per lb.
Chlorate moves off very slowly, and the price is to some
extent nominal at 5½d. per lb. *Bichromate* in good demand
at 4½d. per lb.

SODA SALTS.—*Soda ash* meets with a steady inquiry at 1d.
to 1½d. per degree, but *Caustic soda* closes with an easier
tone, prices being—Cream at 5l. 15s.; white, 60 per cent., at
5l. 16s. 3d., and 70 per cent. at 6l. 15s. to 6l. 16s. 3d. per ton.
Bicarbonate is firm at 4l. 15s., and *Soda crystals* are selling
fairly at 2l. 12s. 6d. per ton.



Memoranda for Correspondents.

Always send your proper name and address: we do not publish them unless you wish.

Write on one side of the paper only; write early; and devote a separate sheet of paper to each query if you ask more than one, or if you are writing about other matters at the same time.

If you send us newspapers, please mark what you wish us to read.

Ask us anything of pharmaceutical interest: we shall do our best to reply.

Before writing for formulæ consult the last volume, if you have it.

Letters, queries, &c., not noticed in this issue will, if possible, be attended to next week.

Holiday Experiences.

SIR,—It is remarkable what variations in trade habits and customs one may see in an occasional visit to a new neighbourhood. I note a few, just to show how, in my opinion, improvements may easily be made, conducive alike to the benefit of the trader and his customer.

In one pharmacy, the store-bottle of aq. calcis is kept on the highest shelf, in the heat of gas and sun. In another, essential oils are kept in small bottles, which, for convenience I suppose, are placed on the highest shelf. The damage done to the oils by heat and light is not appreciated by the proprietor. In another, the taking out of a drawer showed a large accumulation of dust, which by the "pumping" of the drawer is diffused more or less according to the good carpentering of the nest. In this case ferri perox. was distinctly traceable in several neighbouring drawers. In another, a pretty constant odour of horse-powders was noticeable. I could not find out how pulv. fœnug. was stored. These strongly-scented articles are better kept and mixed out of the shop, if it be small or low. In another, a spy through the window gave me an idea that the tincture bottles had not received a cleaning of the insides for many months, at the least.

I often think that the blue tincture bottles have many advantages over white ones, especially when the owner has not a brisk dispensing business. The chief appear to be that light does not affect them, and that no one but the chemist himself need know how small the stock is. In some pharmacies, also, I remarked that there did not appear to be any regular filling up of shop bottles. This regular filling up is a great improvement to the appearance of a pharmacy. Unfortunately, all of us cannot afford to do it, or perhaps, which may be nearer the truth, cannot change the size of the bottles to suit the current use of the tincture.

Yours truly,

HEDER. (52/73.)

The Coming Opium Crop.

SIR,—In one of the last numbers of your esteemed journal which we have received we notice that you give some rather fanciful figures with respect to the coming opium crop. Now we are anxious that the reputation which your paper so justly merits for the accuracy of its information should be preserved, and we therefore hasten to enlighten you herewith about the actual position of the crop.

To begin with the state of affairs in the Salonica district. It is an acknowledged fact that of the autumn sowings there only about 10 per cent. has been saved. Fresh sowings have been made in the month of February, but the result of these is still in doubt; but, even in the best case, it will be impossible to obtain from these fresh sowings as large a yield as from the autumn sowings. Hence we may believe that, even under the most favourable circumstances, Salonica will not produce beyond 400 to 500 baskets.

In Asia Minor the crop outlook was, indeed, as favourable as possible, but the winter sowings, which are the ones yielding the largest crop, have everywhere been more or less

damaged by the cold and by the want of rain during the most critical period. Notwithstanding this, very large spring sowings (so called "Yazliks") have been made, and these latter, under the favourable influence of abundant rain, will yield a better result than is usually obtained from the spring sowings. To-day, according to trustworthy information which we receive from all quarters (from persons who, during the many years in which we have dealt in opium, have ever once proved unreliable), the maximum yield of the coming harvest will only be from 7,000 to 8,000 baskets, and even these figures may be liable to considerable deductions between now and harvesting time.

Let us quote one or two instances to prove that it is wrong to cry "Victory" until the main crop has been gathered:—In 1868, when the crop promised to be one of the largest on record, viz. over 10,000 baskets, a strong hot south wind occurring at the end of May destroyed the greater part of the crop in the fields, and reduced the actual yield to 6,000 baskets, the price rising from 14s. to 40s. and 42s. or 1lb. In 1875 also the crop appeared to be a most abundant one, and it was practically impossible to find buyers for future delivery, when, on May 23 and 24 a cold wave passed and completely destroyed the crop, leaving us with a yield of barely 2,300 baskets.

We are far from being pessimists, but we are fond to place full reliance upon the statements of our trusted informants, and we, therefore, feel bound to advise our friends not to allow themselves to be misled by interested efforts on the part of certain firms here to depict the growing crop as one of unexampled promise.

Smyrna, May 4.

Yours truly,
BARRY & Co.

Measure Cement.

SIR,—While using a pint measure some time ago I had the misfortune to see the bottom of the measure drop out, and the contents lost; but, being unwilling to throw the measure out, I washed it carefully and laid it aside. After some thought on the matter I made balsam canadensis into a stiff paste with plaster of Paris, and smeared this over the broken edges of the glass. I then laid it on a shelf, where it was allowed to remain for about a month, then pared off the superfluous cement, and I am now using the measure regularly, and hope to be able to do so for some time to come.

I am, yours most respectfully,

A CEMENT. (503.)

Oxfordshire Linseed Poultice.

SIR,—In this district sem. lini is used instead of sem. lini cont. for poultices. It is always ordered by the local doctor. As this is the first time (during twenty-five years' experience) that I have known it thus generally used, I should be glad if some of your correspondents would inform if it is usually substituted in other districts. I have been told it is also used in Somerset.

Oxford.

Yours faithfully,
A. LAIT. M.

Tincture of Myrrh and Borax.

SIR,—I am glad to find from to-day's issue of THE CHEMIST AND DRUGGIST that some one else agrees with me regarding Mr. Ince's formula for tincture of myrrh and borax. I consider it very unsatisfactory from beginning to end, and, with regard to your reply to my note thereon, I beg to say, from a lengthened and varied practical experience, that, although many pharmacists may omit the rhubarb altogether, very few chemists and druggists do, and it is also very unusual to use such a small proportion of eau de cologne, which will account for the want of aroma and body complained of by "Tulip."

I beg herewith to send a form of my own composition, which I have used for some time, and which gives general satisfaction; it is simple and easy to make also.

Glycerin. boracis	3iss.
Tr. kramerie	3iij.
Tr. myrrh.	3viij.
Eau de cologne	3viij.

M.

Teignmouth, May 12.

JOHN E. RYAN.

the Pharmaceutical and Medical Preliminary Examinations.

12 Carlisle Street, Dublin, May 15.

S.—I wish to draw your attention to a (to your readers) verpalable error which the President of the Pharmaceutical Society of Ireland is reported to have made at their last council meeting. When asked, "Had the Preliminary examinations of the English Pharmaceutical Society been recognised by any of the English medical bodies?" his reply was that my "correspondence included a letter from the Apothecaries' Society of London stating that they would accept *pro tanto* the Preliminary examination certificates of the English Pharmaceutical Society on their being accepted by the General Medical Council."

N, sir, you know that the British Preliminary certificates have already been accepted *pro tanto* by the General Medical Council, and you will see by the correspondence—of which I enclose a copy, and of which (having been kept specially for THE CHEMIST AND DRUGGIST) you are at liberty to make what use you please—that the letter, which Mr. Brunker evidently misunderstood, states that because the British Medical Council does accept the British Pharmaceutical certificates the Apothecaries' Society of London does also, and that if the Medical Council would accept the Irish Pharmaceutical certificates the Apothecaries' Society of London would most likely do so too.

At the acceptance of these certificates would be a great boon to many of our Irish licentiates, I have taken a considerable amount of trouble in the matter, and would not wish that it went before your readers with any degree of misrepresentation placed upon anything connected with it.

I am, sir, yours faithfully,

E. MCCREERY S. HILL, L.P.S.I.

I subjoin a copy of the correspondence on this subject:—

[Mr. Hill to the Secretary, General Medical Council.]

12 Carlisle Street, Dublin,

21st February, 1888.

S.—Being desirous to present myself for the "Primary examination" of the Apothecaries' Society of London, I wrote to the Secretary asking if the diploma of the Pharmaceutical Society of Ireland would be accepted by them, instead of the "first part" of their "Primary examination," the subjects of which "first part" are "chemistry and elementary physics; practical chemistry; materia medica, including the botany of the Pharmacopœia; pharmacy and prescriptions." They state in their "Regulations" that "candidates will be excused any or all of the above subjects on producing evidence that they have passed equivalent examinations satisfactory to the General Medical Council."

My first answer from the Secretary was simply a copy of the "Regulations" with the following words underlined:—"Equivalent examinations satisfactory to the General Medical Council."

Having this answer to refer me to the General Medical Council, I applied to the branch office for Ireland, and was informed that "if the Apothecaries' Society would accept the diploma the General Medical Council would."

In answer throwing me again to the Apothecaries' Society, I again wrote to their Secretary and received a reply of which I enclose a copy.

It surely leaves the matter in your hands. Will you accept the diploma of the Pharmaceutical Society of Ireland, of which diploma also I enclose a copy?

The diploma gives the title of "pharmaceutical chemist," while that of the "Minor examination" of Great Britain does not. It also specifies distinctly the subjects in which the holder has been examined, which, again, the "Minor" does not. If the Apothecaries' Society and the General Medical Council are each willing, separately, to accept the diploma, surely they will unite in accepting it.

I trust that, in the interests of many deserving men in Ireland, this concession on the part of the General Medical Council, which has lately been granted to the licentiates of the Pharmaceutical Society of Great Britain, will not be withheld by them from the sister society in the sister isle.

I am, sir, yours faithfully,

E. MCCREERY S. HILL, L.P.S.I.

[Copy of letter referred to in the foregoing.]

Society of Apothecaries of London,
Blackfriars, E.C.,

18th February, 1888.

DEAR SIR,—The Medical Council have lately intimated that the certificates of the Pharmaceutical Society of Great Britain will in future be accepted, *pro tanto*, for registration. Consequently this Society accepts them. But no such notice has been issued respecting the Pharmaceutical Society of Ireland. If their recognition should extend to the latter society also, I have no doubt their certificates would be alike accepted. But they must make this known first before we can accept them.

Yours faithfully,

To E. Mc C. S. Hill, Esq. T. PEREGRINE, M.D., Sec.

[Secretary, General Medical Council, to Mr. Hill.]

General Medical Council Office,

299 Oxford Street, London, W.,

February 23rd, 1888.

SIR,—I am directed to inform you that it is entirely outside the province of this Council to recognise any examination for the purposes of professional courses. The examinations of the Pharmaceutical Society of Great Britain were only accepted for the registration of medical students who have to show proof of examination in general preliminary subjects.

Yours faithfully,

HENRY E. ALLEN.

[Mr. Hill to Secretary, General Medical Council.]

12 Carlisle Street, Dublin,

28th February, 1888.

SIR,—Yours of 23rd inst. to hand. Therein you state that "it is entirely outside the province of this Council" (the General Medical) "to recognise any examination for the purposes of professional courses," and also that "the examinations of the Pharmaceutical Society of Great Britain were only accepted for the registration of medical students who have to show proof of examination in general preliminary subjects."

Now, sir, putting all my correspondence on this subject together, it seems to me that the whole matter stands thus. It is outside your province to recognise examinations "for the purposes of professional courses"; it is within the province of the Apothecaries' Society of London to do so. It is outside the province of the Apothecaries' Society of London to recognise examinations for the registration of medical students; it is inside your province to do so. But (and here is the hinging point of all this controversy) I take it, from the letter of the Secretary of the Apothecaries' Society, that they will recognise the subjects of examinations for the professional courses of the Pharmaceutical Society of Great Britain because you recognise their "Preliminary examination," *pro tanto*, for the registration of medical students, and that they will not recognise the professional courses of the Pharmaceutical Society of Ireland because you will not recognise their "Preliminary examination," *pro tanto*, for the registration of medical students.

Thus, you see, the "open sesame" of the whole matter lies in your hands. I therefore put a somewhat similar question to the previous: Will you recognise the "Preliminary examination" of the Pharmaceutical Society of Ireland (a copy of the "regulations" of which I enclose), *pro tanto*, as sufficient for registration as medical students, as you have already recognised that of the Pharmaceutical Society of Great Britain?

The examination is certainly a full one, and ought in its own subjects to satisfy the most fastidious body of examiners. At the Council meeting held on the 1st inst. a member (Sir George B. Owens) stated that he had submitted the "Preliminary examination" papers to a distinguished LL.D., and also to an honours man of Trinity College, Dublin, and both declared that they could not do them (*vide* THE CHEMIST AND DRUGGIST, February 14, page 184).

The examinations of so many bodies are now accepted for registration, that it does seem strange why that on behalf of which I write has not long since been added to the number, and I am sure that if that Society be now added, this concession on the part of the General Medical Council will be fully appreciated by an ever-increasing number of pharma-

cists and pharmaceutical assistants who yearly pass from the shops to the medical colleges in Ireland, and who, under existing regulations, are put back for the term of nearly four years, on account of having to again pass another Preliminary examination in general education.

Looking forward to a favourable reply,

I am, sir, yours faithfully,

E. McCREERY S. HILL, L.P.S.I.

[Secretary, General Medical Council, to Mr. Hill.]

General Medical Council Office,

299 Oxford Street, London, W.

March 5th, 1888.

SIR,—In answer to your letter of the 29th ultimo, I am directed to say that no application for the Preliminary examination of the Pharmaceutical Society of Ireland to be placed on the list of examinations recognised by this Council can be considered unless it is made direct by that examining body, when it would at once be submitted to the Council.

Yours faithfully,

E. McCreery S. Hill, Esq.

HENRY F. ALLEN.

[Secretary, Pharmaceutical Society of Great Britain, to Mr. Hill.]

17 Bloomsbury Square, London, W.C.

March 16th, 1888.

SIR,—In reply to your letter of the 14th inst., I have to inform you that the concession to which you refer was the result of a communication addressed by me to the Registrar of the General Medical Council on November 7th last.

I am, yours faithfully,

Mr. E. McCreery S. Hill,

R. BREMIDGE, Secretary.

12 Carlisle Street, Dublin.

DISPENSING NOTES.

The opinions of practical readers are invited on subjects discussed under this heading.

Dispensers who have compounded any of the following prescriptions, or similar ones, are requested to communicate their results to the Editor.

Cough Mixture. (41/70.)

SIR,—In reply to "Sal Tartaros" in your last issue allow me to remark that the bitterness of the cough mixture is unquestionably due to the action of the potassium carbonate on the emetine (which really undergoes a kind of saponification). It would be much better for "Sal Tartaros" to omit the potassium carbonate, or reduce the quantity to 10 grains.

Yours truly,

CACODYL. (14/50.)

An Emulsion Query.

SIR,—What is the best way to make up the following:—

Ol. jecoris	3iss.
Ferri ammon. cit.	3ij.
Glycerin.	3j.
Aq. calcis ad	3iv.

Two teaspoonfuls three times a day.

H. C. (56/3.)

Salol and Creosote in Pill.

SIR,—Difficulty has been experienced in making a satisfactory pill of the following:—

Salol	gr. j.
Antipyrin	gr. j.
Creosoti	ʒij.
Pt. pil.	

What would you, or your readers, propose as an excipient?

Yours, &c.,

PRAT DUNCAS. (57/37.)

Iodoform Ointment.

SIR,—Should heat be applied till complete solution is effected, or should the ingredients be rubbed together cold, in the following?—

Iodoform.	3ij.
Vaseline.	ʒi.

M. Ft. unguent.

I applied the heat of a spirit-lamp, about 3 inches from porcelain dish, for fifteen minutes or more, with constant stirring. The colour was greenish-brown (dirty), and there was nearly 30 grains of sediment at the bottom of the capsule.

Yours truly,

GENTIAN. (51.)

LEGAL QUERIES.

53/67. *Rhei*.—If you buy goods in December and only complain about them in April, you are clearly not giving the person you buy of a reasonable chance of investigating your complaint, and it is very doubtful whether a court would allow you for defects. If, however, as we understand, the vendor has promised you, in writing, some compensation, you can no doubt fix him to that promise. Perhaps you had better get his letter stamped, through your stamp office (6d.).

52/41. *Qui Vive* puts this case:—He buys a business of another who is owner of premises. The purchase includes all stock and fixtures with exception of counter and window enclosure. After some years the purchaser, without any objection on part of owner or executors, alters the window enclosure and finally removes it as inconvenient. The owner and vendor dies, and six years after purchaser wishes to remove his business into a better position, and gives notice to executors to leave. They insist on window enclosure being left as when business was taken. Can they enforce this? and is not any agreement between vendor and purchaser null and void now the former is dead? Further, if that purchaser is leaving, executors have let the premises to another chemist. Can they be restrained? Purchaser bought the business, and not the premises. There was no fresh agreement after decease of vendor. [We assume that our correspondent is a yearly tenant. An agreement between vendor and purchaser is not necessarily at an end because the vendor dies. Moreover, it is evident that the purchaser has become tenant to the executors. With regard to the alterations, our correspondent would have to make out a strong case to prove leave and licence. Apparently he has committed what is known as voluntary waste, and is therefore liable to the landlord for the damage done, so that the best plan would be to replace the window enclosure in its former condition. With regard to the goodwill, a man who buys a business also buys the goodwill with it. Goodwill, however, has been divided into two kinds—one called local and the other personal. The local goodwill is that which is attached to the premises, and the purchaser has practically signed it by giving notice to quit. The personal goodwill is the right to use the name of the old proprietor and the benefit of his recommendation; and this the purchaser will be able to take with him. The case in point has not, so far as we are aware, been decided. But it would be stretching the law of goodwill considerably to assume that, where a purchaser buys a business and takes over the premises as a yearly tenant, there is an implied covenant on the part of the vendor that the purchaser should give up the tenancy, the premises must not be let at any future time for the same business. The purchaser should have had a proper contract at the time he purchased. The best course for our correspondent to take is to move at once into his new premises and close the old ones until the end of his tenancy.]

53/38. *Llanfair*.—Send your label to the Board of Land and Revenue. The question depends on whether they would regard "swollen and tender feet" as an ailment incidental to the human frame. If it is (and we suppose it would be) your preparation is undoubtedly liable.

54/65. *W. H. G.*—We do not see any reason why you should not enter for your Minor examination under the same

name a ou have always passed under. You will, of course, explain the Registrar how it occurs that your birth certificate under another name, and you must be willing to give him such reasonable evidence as he may require that the really applies to you.

3/57, *D. F.*—The mixture is undoubtedly rendered liable to medicine-stamp duty by the handbill, and probably, too, by the label. But you can only get an authoritative answer in regard to the latter by sending it to Somerset House.

56/52 *Pill.*—In your handbill you take pains to point out the superiority of the pills bearing the name of your firm, and bearing your trade-mark. By so doing you obviously claim a proprietary right, and thus render all pills so advertised liable to the medicine-stamp duty.

MISCELLANEOUS INQUIRIES.

A large number of correspondents ask us for formulæ which have already been published in this journal. It is not fair to more careful readers that we should frequently repeat such information, and so long as the back numbers containing the formulæ or replies required are in print we must decline to do so. Back numbers of our weekly issue can be obtained from the publisher at 4d. each.

Ellina's Embrocation.—See page 269 of the current volume (51/74. *G.*)

Bent's Dog Mixture.—See formula on page 232 of this volume, and comments by the manufacturer on page 330. (51/74. *G.*)

Fly Pills.—Two formulæ are given: Sept. 24, 1887, page 40 and Oct. 8, 1887, page 468. (52/3. *Ison & Son.*)

Essence of Rennet.—A formula is given on page 234 of this volume. (52/42. *Belfast.*)

Hair Restorer.—See our issue of May 21, 1887, page 643; and page 234 of this volume. (52/42. *Belfast.*)

Depilatory.—See THE CHEMIST AND DRUGGIST, Oct. 29, 1887, page 561; and November 12, 1887, page 628. (52/49. *Tahara.*)

35/60 *Terebene.*—The *Harness Solution* which you send is a solution of camphor and bitumen in naphtha. About 2 oz. of artificial bitumen and $\frac{1}{2}$ oz. of camphor to the pint of naphtha would be sufficient. The solution is, apparently, a very seizable one. See back numbers for formulæ for wood stains.

43/43 *J. L.*—The characteristics of the *Liver and Kidney Cure* have been too carefully removed by chopping for proper identification, but senna and leptandrin are observable as the former constituting the bulk of the material.

43/55 *Desdichardo.*—The *Cow Drench* has certainly plenty of oil of organum in it, but no opium. Try the following formula:—

Powdered bayberries	2 oz.
Burnt sugar	1 "
Rectified spirit	6 "
Oil of organum	3 drachms
Water	14 oz.

Decurate for three days and filter.

51/37 *C. P.* (Manchester) sends what he thinks is the most popular children's Powder in the North of England. It weighs about $1\frac{1}{2}$ grain, and is composed of calomel and sugar.

52/24 *Chemical.*—We do not know what the active components of Cuticura ointment and soap are.

In reply to your correspondent "Jason," I believe the *Snow Cake Flour* about which he inquires to be potato farina, and not rice-flour as stated.

TULIP. (27/48.)

51/48. *Tulip.*—*Mistura Glycyrrhizæ Composita* (Brown mixture) U.S.P.:—

	Parts
Pure extract of glycyrrhiza	3
Sugar	3
Acacia	3
Camphorated tincture of opium	12
Wine of antimony	6
Spirit of nitrous ether	3
Water	70

Rub the extract of glycyrrhiza, sugar, and acacia with the water, gradually added; then add the other ingredients, and mix the whole thoroughly.

51/69. *Buxton.*—If tin gets a thin coating of sandarac or other pale varnish, and the gummed labels are attached to the dried varnished spot, they adhere perfectly.

54/24. *W. Smith* describes himself as *A Constant Reader of THE CHEMIST AND DRUGGIST*, but we have so many constant readers of the name Smith that we should like to know which one it is who requires some information respecting kola nuts.

47/37, *Churnet*; 51/74, *G.*; 53/45, *Apprentice*; and 54/59, *Viridis.* *Glycerine and Cucumber.*—Two of these correspondents require a formula for this preparation; the others send formulæ which are said to be unsatisfactory, viz:—

(1) W. & G.'s white glycerine soap	3ij.
Glycerine	3ij.
Cucumber pomade	3ij.
Distilled water	Oj.
Perfume	q.s.

This is all right for twelve hours, then half solidifies.

(2) Sapo. glycerin. alb.	3ss.
Ung. cucum.	3j.
Aq. destil.	3xxxij.
Ess. Jockey Club	3ss.
Pulv. boracis	3ij.

Dissolve the soap in 3 oz. boiling water, add ointment, stir in well, then add borax previously dissolved in 2 oz. aq., then rest of aq. 1 oz. at a time, and ess. Jockey Club.

This is said to be too thin.

Both of these formulæ are modifications of the formula originally published in this journal. Cucumber pomade is very variable so far as acidity is concerned, and for that reason we suggested the addition of a little borax, as in the second formula above quoted. This answers admirably, the result being a creamy emulsion, which does not separate. A little glycerine may be added, but not so much as in the first formula. Good curd soap may be used instead of white glycerine soap. It should be first dried and powdered, and will give a thicker preparation.

52/18. *Qualified Chemist.*—The title L.K.Q.C.P.I. can only be obtained after forty-five months' study, the same as all other medical qualifications.

52/19. *Barber. Shampoo Liquid.*—

Soft soap	3j.
Solution of potash	3ij.
Borax	3ij.
Rectified spirit	3ij.
Perfume	q.s.
Water	Oj.

Dissolve the soap and perfume in the spirit, and the potash and borax in the water. Mix.

52/20. *Alpha.*—We are not surprised that, working by the formula given in our issue of March 31, you are not able to get *Decoct. Cinchonæ Flav. Conc.* similar to what large

manufacturers supply. You must remember that the latter have very superior apparatus for exhaustion and concentration, whereas the method which we gave was purposely intended for ordinary apparatus and small quantities of the preparation. The proper exhaustion of cinchona and the subsequent concentration of the liquid are one of the most difficult problems of practical pharmacy, and as conducted by some manufacturers much technical skill, nicety of detail, and expensive apparatus are employed. It is obvious, therefore, that you cannot have these for the production of 5s. worth of the preparation. It is possible to make some concentrated preparations, such as gentian, chiretta, and quassia, as well on the small scale as on the large; but it is noticeable that retail pharmacists never get the depth of colour and brightness attained by the large manufacturers, although the therapeutic value may not be different.

53/45.—*Apprentice* sends the following formula for **Auburn Hair Dye** :—

Potas. chlorat.	5ij.
Ae. hydrochloric	5iij.

Put into a retort and fill up with water, then distil. One ounce of the distilled liquid added to 20 oz. water.

It is said to turn hair auburn in fifteen minutes, but does not. This is not surprising. Grey hair will be unaffected, but dark hair will certainly be made lighter by the action of the euechlorine in the solution.

57/37. **Hair-oil Perfumes**.—Equal parts of oils of rose, geranium, verbena, and thyme make an excellent perfume, one or two drops of which are sufficient for an ounce of oil. A good odour is also obtained by mixing the two last named with suitable proportions of lemongrass oil or eucalyptus oil.

Books.

55/51. *Piper. Alb.*—You cannot have a better book than Hargreave's "Manual of Venereal Diseases" (R. Kimpton, 126 Wardour Street. 5s.). It gives all information regarding spermatorrhoea.

52/33. *W. S. Woolley.*—Darby's "Botany of the Southern States [of North America]" is a good work, though rather old (1857). Strong's "American Flora" is also useful, and the same may be said of Sir W. J. Hooker's "Flora Boreali-Americana," but that refers more particularly to the botany of the northern parts of British North America, and was published in 1833-40, the two volumes now being worth about 10*l*. The following are the titles of some works dealing with the flora of certain States :—"Botany of California" (by S. Watson, Cambridge, Mass.); "Preliminary Catalogue of the Flora of New Jersey" (by Dr. N. L. Britton, New Brunswick, N.J.); "Flora of Southern and Lower California" (by C. R. Orcutt, San Diego, Cal.); there is also Dr. Asa Gray's "Synoptical Flora of North America," and various publications, such as Lloyd's, on the medicinal plants of the country.

218/15. *T. H. Duncalf.*—We do not remember the title of a book on Eczema published at about 2*s*. 6*d*. Liveing's "Notes on the Treatment of Skin Diseases" (Longmans) is published at 3*s*.

52/54. *Cedric.*—(1) Hudson's soap powder removes the greasiness from sponges. (2) **Eau de Botot**.—The following is Winkler's formula :—

Tincture of cedar wood	500 grammes
Tincture of myrrh	125 "
Tincture of rhatany	125 "
Oil of peppermint	5 drops

Mix.

55/60. *A Country Chemist.*—Spermaceti ointment is, of course, unguentum cetacei B.P.; but we have known simple ointment to be supplied for it. If your ung. cetacei caused irritation, we should judge that it was at fault. The ointment is one of the most soothing in the Pharmacopœia.

53/7. *W. J. Williams.*—Please let us know if you have tried the formulæ for saline powders which we have published, such as the one on page 56 of last volume.

A. Laitram.—In our issue of June 25, 1887, page 783, there is an article on **Foot Rot** with several formulæ for lotions. We have no other formulæ for lambing oils other than those recently published.

53/16. *J. M.*—The **Corn Solvent** which has been so popular of recent years is made according to the following formula :—

Salicylic acid	60 grains
Extract of Indian hemp	8 "
Ether	3ij.
Rectified spirit	3j.
Flexible collodion	3v.

Mix the spirit and ether and dissolve the acid and extract in the mixture, then add the collodion. To be applied to the corn by means of a camel's hair pencil every night.

53/17. *Ung. Sulph.*—**Light Kid Gloves** are generally cleaned by sponging with benzine; a better method, however, is to place the glove on the hand and rub well with a lean piece of linen dipped in milk and rubbed on a piece of white soap. Finish with milk alone and dry in the air.

218/16. *J. S.*—We do not have a formula for **Parorio Substitute** with lactucarium. The preparations of that nature, which are unfortunately sold, are generally compound tincture of camphor without the opium. They are, strictly speaking, harmless, but when the real thing is given in doses based on experience of the substitute then the trouble begins. For that reason the sale of the substitute should be persistently discouraged.

54/59. *Viridis.*—You will find a formula for cheap **Time Cream** in our issue of February 18, p. 233. For Parrish's syrup you can have no better formula than that of the "Unofficial Formulary." Practically the same formula is given in our "Art of Pharmacy."

55/39. *Medicus.*—See reply to "Medical" last week, page 635.

58/48. *R. J. H. R.*—We have no recorded cases of the success or otherwise of the administration of Jalap to children, but from the fact that jalap is one of the most effective purgatives for the young, we judge that jalapin is equally suitable. The dose varies from $\frac{1}{4}$ to $\frac{1}{2}$ grain for one year to about 3 grains for twelve years. This drug should be well divided with sugar of milk and a little aromatic powder added as a corrective.

53/2. *T. E. B. B.*—**Tincture of Euonymin**.—very satisfactory tincture is made as follows :—

Euonymin (brown)	3ij.
Proof spirit	3v.

Digest for three days and filter.

J. E. Ryder.—We are obliged for your suggestions respecting the "Art of Dispensing." It will contain some part of the material you refer to, but we think it preferable to limit it strictly to subjects embraced under the title. Your comments on the circular issued by Messrs. Martindale & Co. seem to be based on a misapprehension. The objection raised against Mr. Wills as a member of Council was that he is commercially interested in a particular school; this not the case with any of the other members of Council.

56/30. *Borax.*—**Glacialine**.—See reply to "Litus," page 603, May 5.



SNOW HILL BUILDINGS.

BURROUGHS, WELLCOME & CO.'S OFFICES AND WAREHOUSES, OCCUPYING SEVEN FLOORS IN ALL.

MESSES. BURROUGHS, WELLCOME & CO. AND THEIR BUSINESS.

Excerpt from THE CHEMIST AND DRUGGIST, January 23, 1888.]

AMONG the exponents of modern pharmacy no firm in this or any other country has acquired a more world-wide reputation than the one which, under the style of Burroughs, Wellcome & Co., has become familiar to every reader of these pages within the last ten years. We have a number of old-fashioned friends (who will, we hope, be ever with us) to whom the new-fangled notions of this corner of the nineteenth century are an abomination and a terror, and to whom these pharmaceutical trivings after novelty and perfection in the manipulation of the raw material of the medical armoury have an odour of anything but scientific sanctity. To them the introduction of a new medicine or a new form of old medicine is a solemn event which should only be undertaken with regard to all medical and pharmaceutical proprieties, as they understand them. Progress by means of research laboratories or properly incorporated societies, and after methodical discussion by recognised authorities, is in their view the only genuine article, and the intervention of commercial enterprise, or of Frenchmen, Germans, or Americans, seems to them to be an uncalculated interference with the natural order of things.

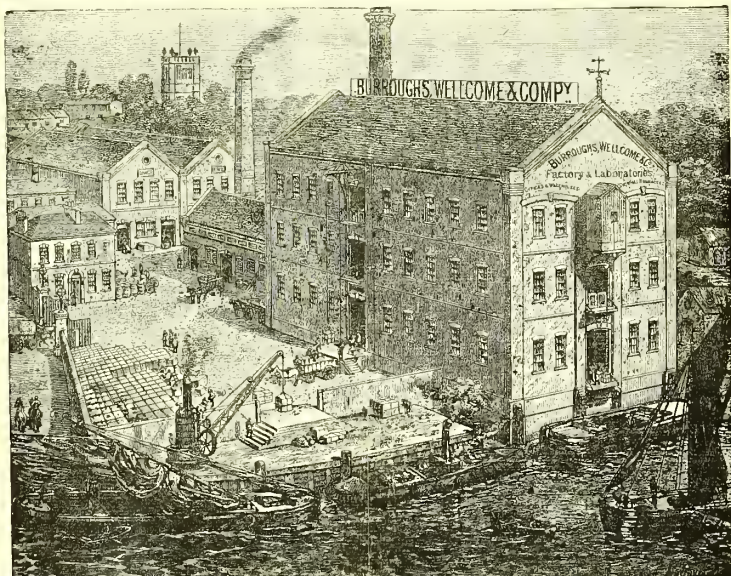
But these gentlemen speak too late. Enterprise in pharmacy is the order of the day. The new generation of medical practitioners are eager for all the aid that skilled pharmacy can give them, and London is the market in which they have been won regardless of nationality. Messrs. Burroughs, Wellcome & Co., since their establishment here, have served themselves not only to meet, but rather to anticipate, the demands of the medical profession, and it is fair to say that in carrying out their plans they have acted with almost loyal loyalty to their pharmaceutical colleagues. They have found it possible to create an entirely new class of business in what seemed to be a sufficiently crowded trade, and they have brought this about by method and manner sufficiently novel to be worthy of record in these pages.

The partners were both young men with an astonishing amount of energy, thorough pharmacists, clearly apprehending the wants of medical men,

and with the means and willingness to supply these. They took up agencies from some of the best American firms, and introduced specialties of their own. These were brought before medical men and pharmacists all over the world in lavish style, but the firm never sought to influence the public except through the regular professional channels. They thus won the confidence of a large number of doctors, and this, we suppose, has contributed in no inconsiderable degree to the remarkable development of their business. We described some time ago their large works at Wandsworth, where a considerable part of the space occupied is used for the preparation and packing of the Kepler Extract of Malt, which product has been for some years owned and controlled solely by Messrs. Burroughs, Wellcome & Co. We have also previously alluded to the artistic beauty with which their imposing offices at the corner of Holborn Viaduct are fitted and furnished. These are unique in the business of pharmacy, and as such deserve a more detailed description.

The building is constructed of red brick with stone facings relieved by pillars bearing Corinthian capitals. The entrance to the office is between pillars of Peterhead granite, with capitals, frieze and gallery elaborately carved. So far the architecture bears the impression of the art-revival which has done so much to change for the better the appearance of English houses during late years; but it is

only when we enter the office that we get an idea of how much more fully that revival has influenced American art. The internal arrangements were all designed by Mr. Wellcome, and executed under the direction of Dr. Christopher Dresser, the eminent art decorator of Sutton, by English workmen. The wood used is all American walnut. The floor of the vestibule is made of mosaic work, with pictorial insertions representing Commerce and Industry. The vestibule is very wide—too wide, indeed, for an entrance to an office—but this has enabled the designer to throw across it an imposing screen of unpolished walnut wood, with a door at the right-hand side. This screen is filled in with bevelled plate-glass, the door is similarly treated, and its furnishings are made of hammered copper. The windows, of which there are four, each contains three walnut wood screens, quaintly carved on the lower part, and composed above of intricate Moorish or Bagdad spindle-work. The centre of each screen is filled in with a small plate of hammered copper, bearing the name of one of the firm's specialties. Everything about the exterior of the building has a solidity which seems to say, "We come to stay," and this is no less apparent in the interior.



BURROUGHS, WELLCOME & CO.'S FACTORY AND LABORATORIES, OCCUPYING SIX BUILDINGS AND FIVE WHARFS.

Photo-micrographs :

THE KEPLER SOLUTION

Compared with Emulsions of Cod Liver Oil.

An Ideal Form of Fat.

Cod Liver Oil rarely agrees when taken plain or on an empty stomach; in either case it is apt to derange the digestive organs, and even cause vomiting and diarrhoea. The more intimately fat is incor-

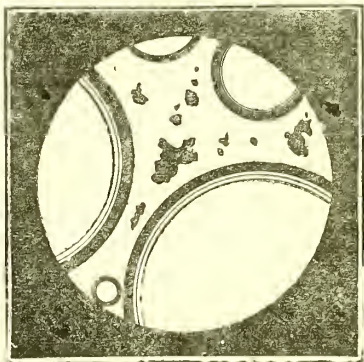


PLATE I.—A PAIR EXAMPLE OF THE COD LIVER OIL EMULSIONS OF THE MARKET, MAGNIFIED 400 DIAMETERS.

porated with the food we eat the more likely is it to agree with the stomach. Realising this, manufacturers have resorted to alkalies, etc., to subdivide cod liver oil, and lost sight of the fact that it is a food. The adjuvants were objectionable,

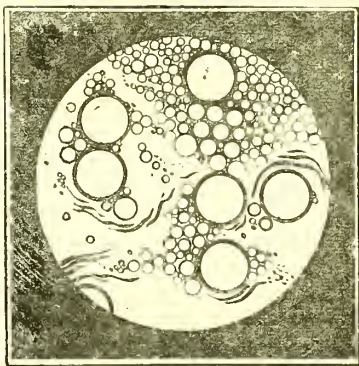


PLATE II.—EMULSION OF OIL AND MILK, MAGNIFIED 400 DIAMETERS.

and the mixtures oily, exciting disgust. "In all oil emulsions oil globules can as a rule be discovered without difficulty" (Godwin Clayton).

Plate I. represents an emulsion strong with essential oils and gums. So coarse are the oil globules, that a segment of one of them occupies a goodly part of the field. What wonder that many maintain that it is better to give cod liver oil plain than in emulsion!

Plate II. represents what is claimed to be the most finely divided of all emulsions. Not only does it go "queer," throwing down a precipitate, etc., but the size of the large circles (the small ones are milk) conveys a good idea of how indigestible must be the oil in even the best of emulsions.

The microscopic appearance of the globul in milk (Plate III.) forms a strange contrast with that of the two preceding products mentioned. The fat of milk is of course in a highly assimilable form.

Kepler has recently discovered a process by

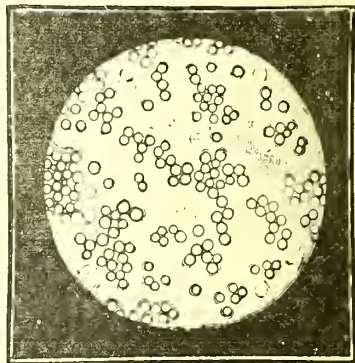


PLATE III.—PURE MILK, MAGNIFIED 400 DIAMETERS, SHOWING OIL GLOBULES.

which cod liver oil can be dissolved in a properly prepared extract of malt. This product is called the *Kepler Solution*. It is more quickly absorbed and assimilated than any other known form of cod liver oil preparations. It is as sweet and

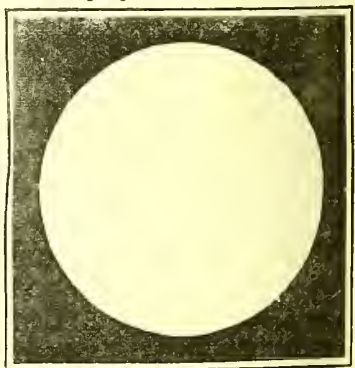


PLATE IV.—Kepler Perfect Solution* of Cod Liver Oil, Magnified 400 Diameters.

palatable as cream. *Kepler Solution* does not disturb the stomach like emulsions, and "under the microscope (Plate IV.) no oil globules are visible, and the field is perfectly clear." It is simply a combination of two foods—oil dissolved in malt—and this is why it agrees better than oil and chemicals. It is in no sense an emulsion, for, as Mr. Godwin Clayton says, "its constituents are in a condition of more intimate admixture, namely, that of Solution."

Supplied in $\frac{3}{4}$ -lb. and $1\frac{1}{2}$ -lb. bottles at 22s. and 38s. per dozen, subject to our usual discount. Retail at 2s. and 4s.

* "An ideal form for administration of fat."—*British Medical Journal*.

BURROUGHS, WELLCOME & CO., Snow Hill Buildings, LONDON, E.C.

NEPENTHE.

(Prepared exclusively from Opium.)

The safest and best preparation of Opium; produces neither headache, sickness, no constipation.

Dose, the same as that of Tinct. Opii, B.P.

Price 8s. per pound.

In an analysis of 10,000 prescriptions recently published in THE CHEMIST AND DRUGGIST, Nephthe occurred more frequently than any other proprietary article except Vaseline and Chlorodyne.

The word *NEPENTHE* being registered under the Trade Marks Act, Messrs. FERRIS & Co. have the *SOLE RIGHT* to use it; and the Trade are respectfully cautioned against any infringement of their Trade Mark *NEPENTHE*, and the use of any Mark so nearly resembling it as to be calculated to deceive; and against the application of any false trade description, and against any interference with their privilege (see 'Merchandise Marks Act, 1887 50 & 51 Vict. ch. 28); and also against dispensing any but Messrs. Ferris & Co.'s preparation when *NEPENTHE* is ordered in a prescription.

Trade and Wholesale Terms for NEPENTHE upon application.

FERRIS, BOORNE, TOWNSEND & BOUCHER,
WHOLESALE AND EXPORT DRUGGISTS, BRISTOL.
FIVE PRIZE MEDALS AWARDED.

VAN HOUTEN'S COCOA

PURE] is **ADMITTED** to be **[SOLUBLE**

INCOMPARABLY THE BEST in the world and **THE MOST ECONOMICAL**

Produces instantly a most delicious, refreshing, highly nourishing drink, easily assimilated even by the most delicate invalids or children. No milk required.

On account of the **great strength cheaper** to use than tea.

For breakfast, lunch or supper. For rich and poor.

Invaluable in hospitals, on board, in the camp, railway stations, for workmen (at home and to take to the work), etc., etc.

"Is admirable"—"flavor is perfect"—"so pure & rich"—BRITISH MEDICAL JOURNAL

"Delicate aroma"—"really cheaper in the end"—THE LANCET.

ONCE TRIED, ALWAYS USED AND RECOMMENDED.

Sample Tins Free through your Grocer or Chemist.

CAUTION!**DALMAHOY'S EAU DE MENTE PECTORALE**

(Or CORDIAL PEPPERMINT WATER).

Merchants and Shippers are informed that the only genuine article so long known under the above name is made and sold Wholesale only by Arthur S. Hill & Son, 101 and 103 Southwark Street, London, the Sole Proprietors whose name and address are moulded in the glass, branded on the cork and with the registered trade mark, are engraved on the label of every bottle.

REGISTERED TRADE MARK.



SQUIRREL BRAND.

ARTHUR S. HILL & SONWholesale and Export **Druggists.**

(ESTABLISHED A.D. 1755.)

WM. BUSH, SON & CO.

YORK STREET, WALWORTH, LONDON, S.E. Established over 40 Years

Wholesale and Export Chemists. Manufacturers of Concentrated Fruit Essences and Flavoring of every description. Colour Extracts for Confectionery. Citrate of Magnesia, &c. Importers of the Finest Super Essence of Lemon and all Essential Oils, &c.

PRICE LIST AND SAMPLES ON APPLICATION. TELEGRAPHIC ADDRESS—"BUSHWORTH LONDON."

DRUGS, CHEMICALS, AND PHARMACEUTICAL PREPARATIONS**BARRON, SQUIRE & CO**

(LATE DREW, BARRON, & CO.),

WHOLESALE & EXPORT DRUGGISTS**BUSH LANE, LONDON, E.C.,****MANUFACTURERS OF ALL DESCRIPTIONS OF PHARMACEUTICAL PREPARATIONS,**

Beg to inform Merchants, Shippers, &c., that all Indents entrusted to them will receive careful attention and prompt execution.

Messrs. B., S. & Co. request the attention of their friends and the Trade, at home and abroad, having PURCHASED THE BUSINESS of Messrs. JAMES BASS & SONS, Hatton Garden, and with it the various Formulæ from which their Special Preparations have been made, and pledge themselves to supply them in all their integrity.

Specimens of these Preparations have remained in the Museum of Kew Gardens during 23 years without deterioration

Silver Medal at Inventions Exhibition 1885.



Established
1798



Howards & Sons

FLUID EXTRACT OF CINCHONA,

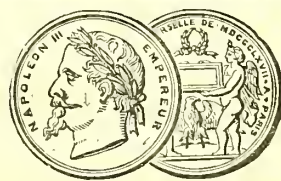
made from C. Califaya, or C. Succirubra, containing the whole alkaloidal contents of the bark.

QUININE, CINCHONA ALKALOIDS,

Aids, pure.	Citrate of Iron & Quinine, P.B.
Ethers, pure & methylated.	Citric Acid & Citrates.
Antimony preparations.	Corrosive Sublimate.
Benzoic Acid & Benzoates.	Iodides of the Alkalies.
Carbonate of Soda (Howards').	Iodoform.
Bismuth preparations.	Magnesia.
Brax & Boracic Acid.	Mercurials, Calomel, &c., &c.
Bomides of the Alkalies.	Rochelle Salt & Pulv. Seidlitz.
Camphor Bells, Blocks, & Flowers.	Spirit preparations.
Cocaine Hydrochlorate.	Urethane & Hypnone.

AND OTHER PHARMACEUTICAL CHEMICALS.

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Detailed Price Lists on application.

DUNCAN, FLOCKHART & CO.

Wholesale and Export Druggists,

EDINBURGH.

CHLOROFORM

(DUNCAN'S).

PREPARED FROM PURE AND METHYLATED SPIRIT.

Put up in all sizes of bottles. A strap with Name and Trade Mark of the Firm is placed over the stopper of each bottle. For Export, in bottles corked and luted (stoppers attached), and in hermetically sealed flasks when required.

N.B.—We guarantee our Chloroform prepared from METHYLATED SPIRIT to be PURE CHLOROFORM, answering all the tests of the British Pharmacopœia.

CHLORIC ETHER

(DUNCAN'S).

This is a Special Preparation, quite different from Spir. Chloroformi, B.I., perfectly miscible with water, and always of the same strength.

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Each Capsule equal to half a teaspoonful of Fluid Extract of Cascara Sagrada. The chief drawback to the use of this valuable drug, its unpleasant bitterness, is obviated when taken enclosed in Capsules.

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For making Curds and Whey. A thoroughly Reliable Preparation, warranted to keep for years in any climate.

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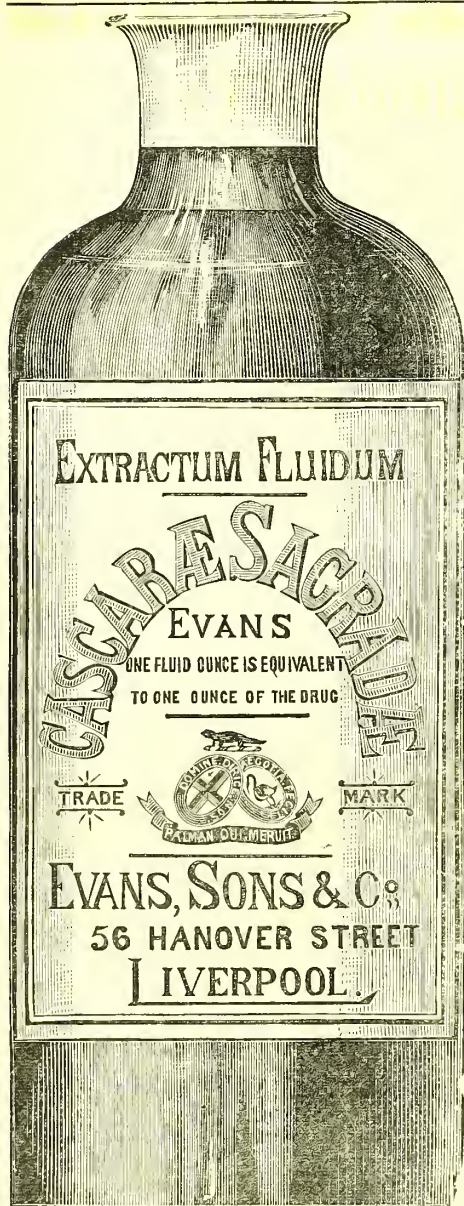
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large stock of selected Cinchona Bark, Coca Leaves, Opium, and
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Rhamnus Purshiana:
growing in California.
N. O. Rhamnaceae.

This plant is a powerful tonic, laxative, preferably in small doses extending over some time. The bark is in largish pieces, rather flat and thin, breaking short; pale yellowish brown, with adherent brown outer bark, and dark fibrous inner layer; little odour, and nauseous taste; when the outer layer is corrugated and thickened, the bark is not so valuable. The fluid extract represents measure for weight, one minim being about equal to one grain of the powdered bark.

Dose.—3 to 15 drops as a laxative; 20 to 50 drops as a purgative.

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WEIGHT.										5 and 4 Grains.	3 and 2 Grains.	1 Grain.
										s. d.	s. d.	s. d.
1 to 4 lbs.	3 0	3 6	5 0
4 " 7 "	2 6	3 0	3 9
7 " 14 "	2 3	2 9	3 3
14 " 28 "	2 0	2 6	3 0
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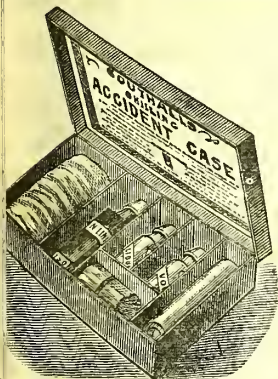
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THE ORIGINAL PREPARATION.

Price (in England) 10s. 6d. per pound, packed (for Dispensing only) in 10-oz., 22-oz., 40-oz., and 90-oz. Bottles.

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IMPORTANT CONCESSION!!!—Note: On all first orders for an original case each size, an extension of credit of six months will be afforded, thus enabling the retailer to secure all the benefit of selling every bottle before paying a single shilling out of his own pocket.

Artistic Window Tablets, Stationery, &c. with each order.

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"I hereby certify that this is a genuine unmixd Mustard Seed Oil.—(Signed) A. NORMAN TATE, F.I.C., F.C.S., Liverpool, August 8, 87."

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DALMATIAN INSECT POWDER in Original 28-lb. tins at
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CIRCASSIAN OIL—40-gallon barrel, bright and clear at
COLZA OIL—1s. 6d. per gallon (for Hair Oil, &c.); 10-
9-gallon tin, for 15s.

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						Containing	30	36	48			
scara Sagrada (5 mins.), in round boxes						Per dozen	7/-	In oval screw-cap bottles		—	—	—
stor Oil, in square boxes						...	5/-	Ditto	ditto	5/6	—	8/-
d Liver Oil, in square boxes						...	7/-	Ditto	ditto	—	8/-	—
paiba, without Name, in oval boxes						...	4/9	Ditto	ditto	5/6	—	8/-
paiba, with or without Name, best, in oval boxes						...	5/9	Ditto	ditto	6/6	—	9/-
paiba, Flexible, in oval boxes						...	6/-	Ditto	ditto	6/9	—	9/6
paiba, Flexible, larger, in oval boxes						...	8/-	Ditto	ditto	—	10/-	—
paiba and Cubeb, in square boxes						...	9/-	Ditto	ditto	—	11/-	—
paiba, Cubeb, and Buchu, in oval boxes						...	8/-	Ditto	ditto	—	10/-	—
paiba, Cubeb, and Sandal-wood Oil, Flexible, in oval boxes...						17/-	Ditto	ditto	17/-	—	25/-	—
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ndal-wood Oil, Flexible, English, in round boxes						...	26/-	Ditto	ditto	—	30/-	—
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g, Norwegian, in square boxes...						...	6/-	Ditto	ditto	—	7/-	—
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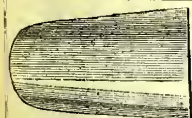


Fig. 5.



Fig. 1.

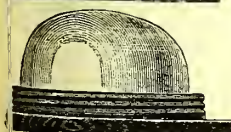


Fig. 3.

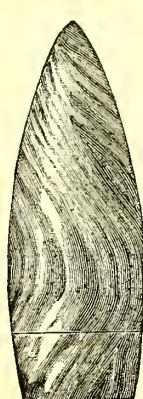


Fig. 4.

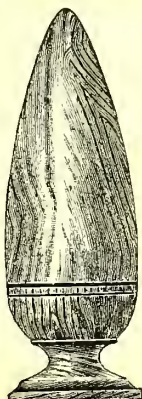


Fig. 6.

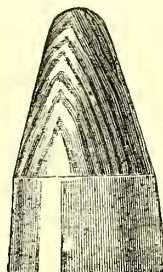


Fig. 7.

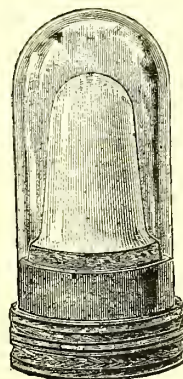
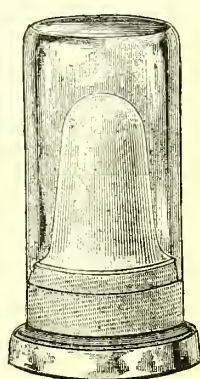


Fig. 8.



F. 1.	In Ebony Cases, flat for the pocket	Per doz.	6/-
F. 3 & 4.	In Boxwood Cases, per doz., 3/- and 4/-; in Vegetable Ivory	"	6/-
F. 5.	In Boxwood Cases, per doz., 2/8 and 4/-; in Vegetable Ivory	"	4/- and 6/-
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F. 7.	Mounted, in Stoppered Bottles	"	6/6
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F. 10.	On new Glass Mounts, Glass Covers	Per doz.	3/6, 4/-, 5/6, and 8/-
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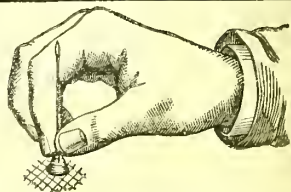
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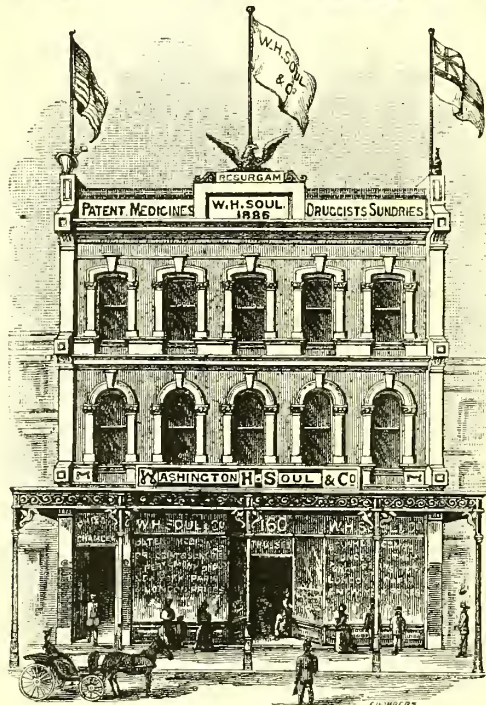
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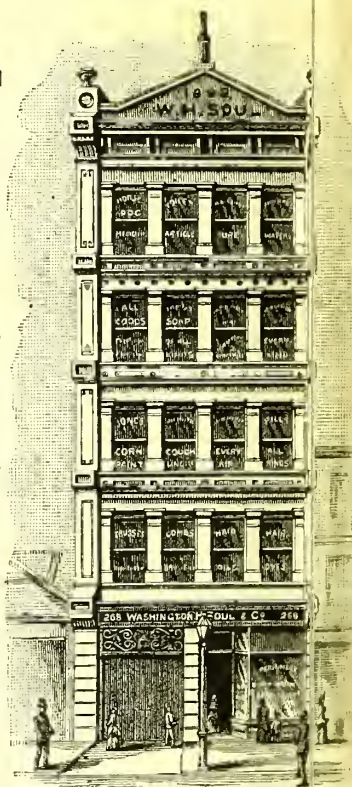
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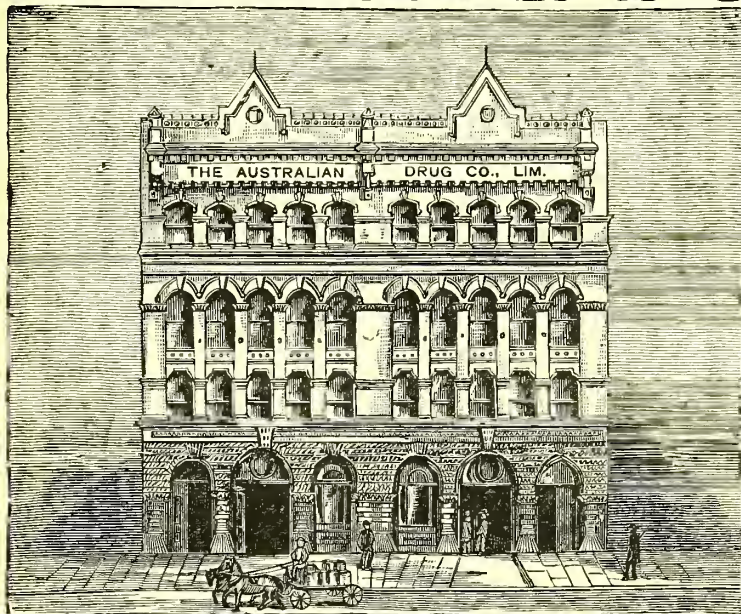
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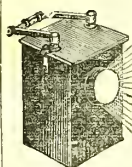
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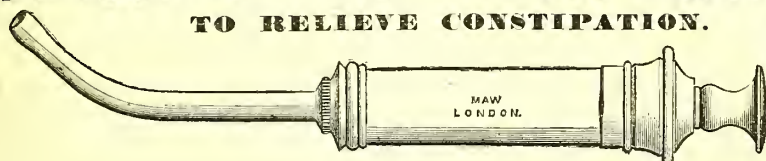
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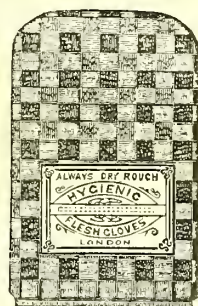
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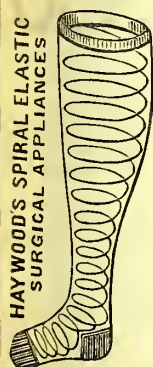
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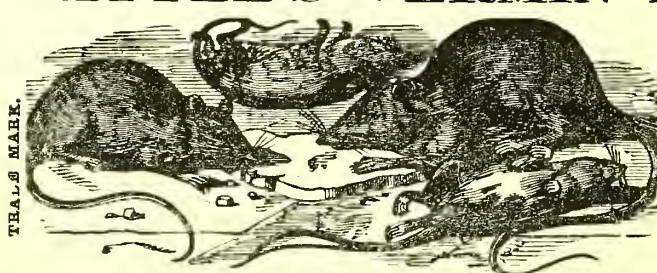
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FOR THIS
SPECIALITY**CHLORIDE OF LIME!**IN AIRTIGHT WATERPROOF
INVENTORS AND
MANUFACTURERS& ODOURLESS PACKAGES
NATIONAL CHEMICAL CO., LONDON

THE N. C. Cos. PACKAGES HAVE STOOD THE TEST FOR MANY YEARS, AND CAN ALWAYS BE RELIED UPON TO GIVE SATISFACTION.

KEPT IN STOCK BY ALL WHOLESALE DRUGGISTS &c.

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PACKAGES**HARTMANN'S HYGIENIC WOOD WOOL DIAPERS**

Used in all the Principal Hospitals and Recommended by the Medical Profession.

For Home Use, Delicate Health, Accouchement, and for Ladies Travelling, they are invaluable and indispensable. They are Soft, Light, Antiseptic, and are supplied at the Actual Cost of Washing. Supplied by Chemists, Ladies' Outfitters, and Drapers.

Advertised at 1/- and 2/- per dozen. To Chemists, 9/6 and 19/- per gross. Pamphlets and Showcards on application.

The **SANITARY WOOD WOOL CO., LIM., 11 HATTON GARDEN, LONDON.****T. BAGE BLYTON & CO**

PHARMACEUTICAL CHEMISTS,

MANUFACTURERS OF

BRITISH PHARMACOPŒIA, THROAT HOSPITAL, and every description of

MEDICATED LOZENGES & BOILED SWEETS

For sale by Chemists, for Wholesale and Export; also

COMPRESSED TABLETS. including Ammonium Chlorid, Camphor (with Sugar), Cocain with Pot. Chlor. and Borax, "Voice Tablets"; Potassium Bicarbonate, Potassium Chlorate (from chemical pure salts), Potassium Chlorate with Borax, Saccharin, ¼-grain, ½-grain, and 1-grain.

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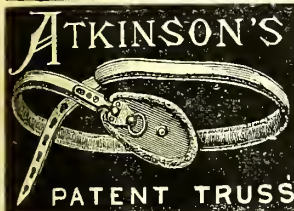
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Now prepared only by **CURTIS & COMPANY**, 48 Baker Street, Portman Square, LONDON, W.
 GRAN. EFFER. ANTIPYRIN (introduced by Curtis & Co.)



PATENT RIGHTS GRANTED FOR THIS TRUSS IN UNITED STATES.
ATKINSON'S PATENT TRUSS.

"Quite a new departure. The most ingenious and effective truss we have ever examined."—*Med. Press and Circular*.
 "An important feature is the peculiar form of the face of the pad, which allows pressure to be given by a flat surface or a more or less obtuse one, at discretion. The advantages of this truss are very marked."—*British Medical Journal*.
 "An important improvement. The practical surgeon will see the great advantages presented by this truss."—*The Lancet*.
 "Will supersede the old-fashioned, inefficient, and uncomfortable instruments which makers still continue to supply to sufferers from hernia."—*Hospital Gazette*.

Illustrated Particulars Gratis by Post from the Patentee—
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ESTABLISHED
1772.

HENRY'S CALCINED MAGNESIA

Continues to be prepared with scrupulous care in the greatest chemical purity, by

Messrs. **THOMAS & WILLIAM HENRY**, 11 East Street, St. Peter's, Manchester,
 And is sold in bottles, authenticated by a Government Stamp bearing their Names and Trade Mark, "Henry's Calcined Magnesia."

Price 4s. 6d., or 2s. 9d.

NEW YORK—Messrs. W. H. SCHIEFFELIN & Co., William Street. PARIS—Messrs. ROBERTS & Co., 5 Rue de la Paix.

**GOVERNMENT DISINFECTANT**

CARBOLIC POWDER (PINK) in 1 Cwt. 2 Cwt. CASKS 1lb & ½ Packages.
CARBOLIC POWDER (PINK) in TINS 6d & 1/- **CARBOLIC SOAP** No 1 & No 2
CARBOLIC FLUID in 6d & 1/6 & 1/2 BOTTLES **CARBOLIC & GLYCERINE SOAP** in ¼ lb. TABS
 FREE FROM POISON TO BE HAD FROM ALL WHOLESALE DRUGGISTS
 AGREEABLE IN SMELL. **THE GOVERNMENT SANITARY CO.** LONDON E.

**VALUABLE & INTERESTING TO EVERYBODY
COMPRESSED HOPS.**

Best Hops compressed into small parcels of one pound and half-pounds, and sent out in cases containing 30 lbs. each. These Hops are specially selected and compressed for keeping purposes, and will retain their aromatic strength for a considerable time.

They are introduced to the Public to enable them to make their own BITTERS, YEAST, HOME BREWING, and numerous other purposes. Full particulars given on each packet.

SAMPLES AND PRICES SENT ON APPLICATION TO

A. WILKINSON & SONS, 27 DERBY LANE, OLD SWAN, LIVERPOOL.

P.S.—Chemists will naturally see the great advantage in making their own Bitters from the Pure Hop itself.

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(TELEGRAMS—"BREKKE'S HULL")

B. & H.

HULL,

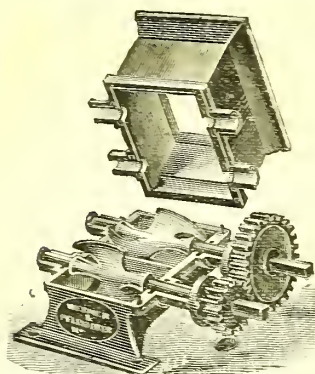
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MANUFACTURERS OF PURE

NORWEGIAN COD-LIVER OIL.

The Oil is supplied in 25-gallon tin-lined casks. Quantities for United States or the Colonies may be shipped direct from Norway if desired.

SAMPLES AND QUOTATIONS ON APPLICATION.



Size 3, Type I, for 1-lb. Mass.

THE "UNIVERSAL" KNEADING AND MIXING MACHINE FOR PILL MASS MAKING,

ALSO FOR
Horse Balls, Tooth Pastes, Ointments, Soaps, Powders, and for
general Mixing and Incorporating.

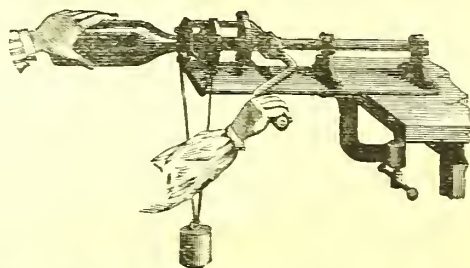
REPLACES WITH ADVANTAGE ALL OTHER APPLIANCES FOR THESE PURPOSES.

Made in various sizes, to do from $\frac{1}{2}$ lb. up to 1 ton at a time.

WERNER & PFLEIDERER, 58 Upper Ground St., LONDON S.W.
Blackfriars Bridge,

NEW CAPSULING MACHINE

The only Machine
which leaves no crease
or pleat on the
Capsule.



Can be fixed to any
Counter.
A single pull of the lever
is sufficient
to fix the Capsule.

Patentee—C. MELIN, 37 Crutched Friars, LONDON, E.C.

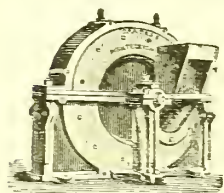
CARTER'S DISINTEGRATORS

Will Pulverise, Granulate, or Shred almost any Mineral, Vegetable, or Animal Substance.

NEARLY 1,100 IN USE

IN ALL PARTS OF THE WORLD.

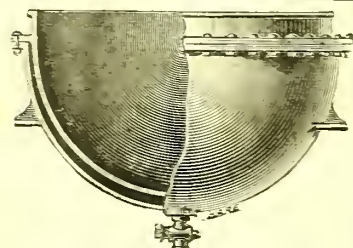
For Grinding Sugar, Bark, Linseed, Ginger, Pepper, Spices, Salt, &c., this Machine is invaluable.
Made in 9 Sizes. Illustrated Catalogue may be obtained on application.



Samples of ANY Material will be Ground free of charge

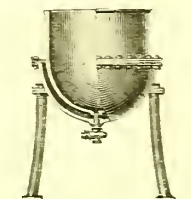
J. HARRISON CARTER, 82 MARK LANE, LONDON; and PARIS.

Telegraphic Address—Milling London.

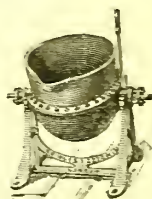


Steam Pan.

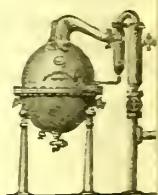
MANUFACTURERS



Steam Pan.



Tilting Pan.

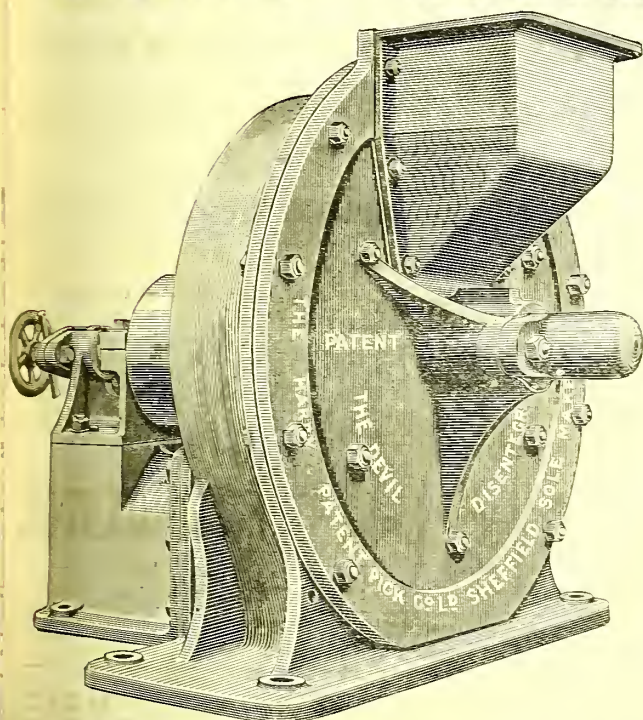
Vacuum Pan, Condenser
and Air Pump.

Crushing and Grinding Machinery.
Boiling and Evaporating Machinery.
Paint and White Lead Machinery.
Food Preserving Machinery.
Fruit Preserving Machinery.

BRINJES & GOODWILL,
FIELDGATE ST., LONDON, E.

ESTABLISHED 1829.

THE "DEVIL" DISINTEGRATOR



Will Grind, Granulate,
or Shred any Material,
Animal, Vegetable, or
Mineral.

The following is an unsolicited Testimonial from a firm of Dry Soap Manufacturers, who have tried various other makes of Disintegrators without success:—

"April 28, 1888.

"We are quite satisfied with your Machine, and in all probability will require another and larger one. Let us know the cost of one as large again as the one we have."

The Machine referred to is one of our smallest Machines (price £30), and is grinding 2 to 3 tons of material per hour.

The following table gives some information as to the quantities of various classes of material the Machines will deal with per hour.

MATERIAL	No. 1 SIZE MACHINE	No. 2 SIZE MACHINE	No. 3 SIZE MACHINE
Coal Dust	10 cwt.	20 cwt.	50 cwt.
" (for Briquettes)	20 "	40 "	200 "
Lead Ore	30 "	60 "	140 "
Slate	20 "	25 "	50 "
Bones (Dry) Fine	10 "	20 "	50 "
" " Medium	15 "	35 "	90 "
" " Coarse	20 "	40 "	110 "
" (Green)	3 "	6 "	15 "
Hoofs and Horns	2 1/2 "	3 "	20 "
Rags	—	3 "	5 "
Indian Corn	5 "	15 "	40 "
Wet Clay	—	20 "	50 "
Oak Bark	—	15 "	30 "

Purchasers should compare the quantities of material ground per hour with the capacity of other Machines. There is no other Grinder that will deal with anything like these quantities in the same time.

No.	PRICE	Belt required	Diameter of Pulley	Revolutions per Minute
1	£30	3 inches	8 inches	1,000
2	£60	6 "	12 "	900
3	£90	7 "	14 "	800

The chief feature of this Grinding Machine is that it combines the centrifugal with the grinding action, and it can be adjusted to grind to any degree of uniform fineness while in motion.

No Screens or Grates are required. Will Grind Wet or Dry Material, Clogging being impossible.

Samples of material forwarded to us may be passed through the Machine in the presence of intending purchasers or forwarded by rail.

SOLE MAKERS:

The HARDY PATENT PICK CO., Ltd.

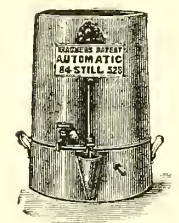
Engineers and Mining Tool Makers, **SHEFFIELD.**

THE BRACHER PATENT AUTOMATIC DISTILLING APPARATUS



Has of late been much Improved, and is pronounced to be
A VERY CLEVER CONTRIVANCE!

Occupies little space, and needs no more attention than the fire
upon which it is set to boil!



TESTIMONIAL.

From J. W. HARDMAN (late Taylor),
Dispensing and Family Chemist,

113 Burley Road, Leeds, November 14, 187.

I herewith enclose cheque, please acknowledge in due course. I am very much pleased with the No. 4 Copper Still, it answers its purpose admirably. I use it on a gas stove and have a pipe connected to supply the refrigerator, so that it is no trouble whatever.

Yours respectfully,
J. W. HARDMAN.

To Messrs. Bracher & Co.

PRICES AND FULL PARTICULARS FROM

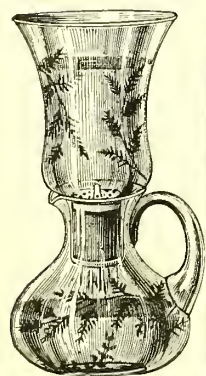
BRACHER & CO., Inventors & Patentees, West Hill, WINCANTON.

SHOWROOMS:

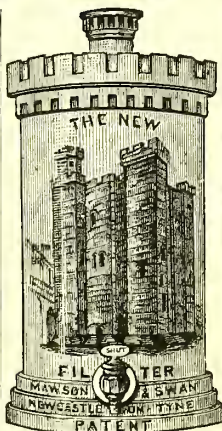
LONDON—100 Houndsditch; MANCHESTER—24 Corporation Street; WOLVERHAMPTON—2 Cleveland Street.
ALL COMMUNICATIONS TO WINCANTON.

THE ONLY FILTERS PROVEN BY ANALYSIS.

BEWARE



Engraved Glass .. 6/6
Do., with handle
(with six charges) 7/6



White, decorated 1 2
Earthenware .. 35/- 45/-

OF DRINKING WATER

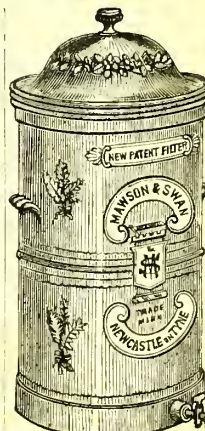
which has not been thoroughly Filtered,
as, besides Lead, Lime in excess, and
other mineral impurities, most waters
contain either sewage, the eggs of in-
testinal worms, and hydatid disease, or
the

Germ of Infectious Diseases,
such as Cholera, Dysentery, Typhoid Fever,
&c.

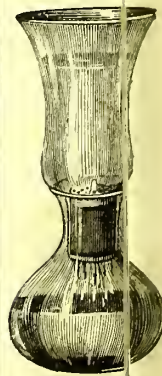
Repeated analyses have proved that

**MAWSON'S
NEW
PATENT FILTER**

Removes all these impurities, and that it
is the only efficient, practical, and scien-
tifically reliable Filter.



Size— 1 2 3 4 6
Price, 14/6, 21/, 27/, 35/, 50/.



Plain Glass .. 4/6
Do., with handle
(with six charges) 5/6

MAWSON, SWAN & WEDDELL,
20 West Grainger Street, Newcastle-on-Tyne.

WHOLESALE AGENTS—London: Messrs. S. Maw, Son & Thompson; Messrs. Bentley & Sons; Messrs. Bourne, Johnson & Latimer; Mr. William Toogood; Messrs. Lynch & Co. Manchester: Messrs. Woolley, Sons & Co. Liverpool: Messrs. J. H. & S. Johnson; Messrs. Evans, Sons & Co. Birmingham: Messrs. Churchill & Sons; Messrs. Salt & Co. Edinburgh: Messrs. Duncan, Flockhart & Co.; Messrs. Raimes & Co. Glasgow: Glasgow Apothecaries' Co. Belfast: Messrs. Grattan & Co. Cork: Goulding & Co., Ltd.

SOLE AGENTS for CANADA—EVANS, SONS & MASON, LIM., MONTREAL.

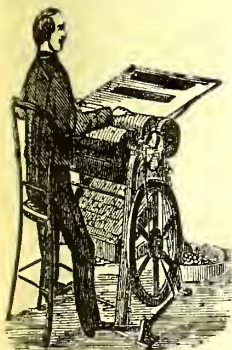
ROTARY PILL
MACHINES

Fig. A.

Fig. A.—This invention consists in a novel and improved arrangement of Machinery, whereby any description of Pill Mass can be converted into Pills, at the rate of from 15 lbs. to 40 lbs. per hour, according to the size of the Machine used.

Fig. A.—No. 1 .. £12 12s.
No. 2 .. £15 15s.
No. 3 .. £20 0s.

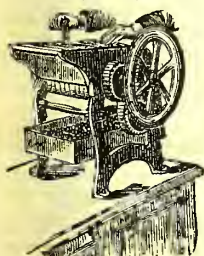


Fig. B.

Fig. B.—A small useful Machine, capable of making 10 lbs. of Pills per hour, particularly adapted for persons making small quantities, at £7 15s.

Press suitable for same, £2 15s.

Any of the above can be made to cut two or three different size Pills, at an additional cost for extra Rollers and Plates.

PIPING PRESSES

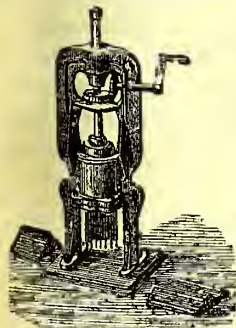


Fig. C.

Fig. C. is the improved Press for Piping, by means of which a great quantity of Mass can be Piped in a few minutes, truer than by the old method of rolling.

No. 1 .. £3 0s.
Fig. C.—No. 2 .. £5 10s.
No. 3 .. £8 0s.

J. W. PINDAR'S NEW ROTARY PILL MACHINES

As used to this date by Messrs. Holloway, Cockle, Cox, and all the principal Pill Makers in Europe, Asia, Africa, America, and Australia.

J. W. PINDAR'S
New Rotary
HORSE BALL
MACHINES.

These Machines are on a similar principle to the Rotary Pill Machines that have given such great satisfaction in all parts of the world.

Price £8 15s.

Rollers for other sizes, Riggers for Steam Power, also Gas Apparatus if required, supplied at a small additional cost.

Mr. J. W. PINDAR, 224 Strand, 13th March, 1866.

Sir,—I have much pleasure in stating that the Pill Machine which you made for me answers remarkably well, as the Pills are far better made than those by hand-machines, and with much less waste. I can, therefore, confidently recommend it as a very excellent one, a great saving of labour and, consequently, expense.—I remain, yours faithfully,

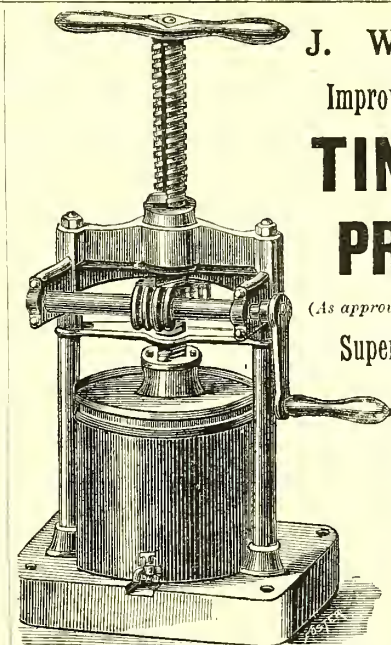
THOMAS HOLLOWAY.

3 Crane Court, Fleet Street, Feb. 14th, 1871.

To Mr. J. W. PINDAR.

Dear Sir,—We have now used your Rotary Pill Machine about six years, and find it answers better than any we had previously used, and makes the Pills of a very regular size.—Yours truly,

T. WHELPTON.



J. W. PINDAR'S

Improved Double-Action

TINCTURE
PRESSES

(As approved of by Wholesale Chemists)

Superior to Hydraulic,

On account of Lolding the pressure.

Prices for One Gallon

£3 10s.

For each additional

Gallon, £1 10s. extra.

Directions for use
forwarded with each
article.

338 Oxford St., opposite Great Portland St.

Mr. J. W. PINDAR, Feb. 11th, 1871.

Sir,—The Rotary Pill Machine and Press which we had from you (for a special order) answered very satisfactorily.—We are, Sir, yours respectfully,

JOHN BELL & CO.

29 Murray St., New York, and Farringdon Rd.

Mr. J. W. PINDAR, London, Nov. 9th, 1880.

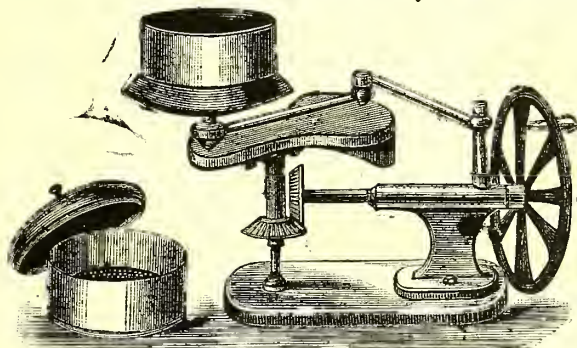
Dear Sir,—Your letter of inquiry came duly to hand. As I always told you, the Pill Machine in operation at my London warehouse has given entire satisfaction. So have those we are using in this country. We can make smooth, round Pills of uniform size at a very small expense. I can safely say that your Pill Machine is all that you claim it to be—a perfect Machine.

Yours truly,

A. J. WHITE.

NEW PATENT
"ECCENTRIC" PILL COATER.

Invented and made by J. W. PINDAR, Patentee.



PRICES.

No. 1.—For 2 lbs., £2 5s.; sifter for same, 7s. 6d.

No. 2.—For 5 lbs., £3 15s.; sifter for same, 15s.

No. 3.—For 10 lbs., £5 15s.; sifter for same, £1 5s.

No. 4.—For 20 lbs., on Iron Standards for Steam, Gas, or other power, £15 15s.; sifter for same, £2 5s.

The smallest Machines can be worked by Steam Power at a small additional cost.

By an entirely new arrangement of mechanism this machine is constructed in a manner which supercedes all others, as, owing to its "Eccentric" motion, the Pills—which may be coated with Pearl, Silver, Gold, or Sugar, &c., &c.—are thoroughly separated from each other during the process, and retain their original spherical form, whilst being thrown round the receptacle with remarkable velocity.

These machines are equally adapted for coating large or small quantities; thus, a machine constructed for and suitable for coating 20 lbs. will coat 1 lb. only with equal efficacy, and in the most satisfactory manner.

Each machine is supplied with a Drug or Powder Sifter, to be attached if required, and which, fitting to top of Pill Receptacle, is subject to the same "Eccentric" motion as above mentioned.

This addition will be found of great advantage in the Laboratory, being both efficient and compact.

Testimonials from all parts of the World may be seen on application to

J. W. PINDAR, 75 New Church Rd., Camberwell, LONDON.

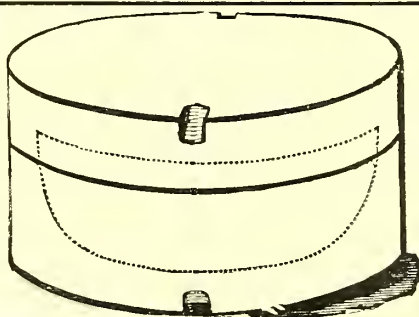
WILLIAM TOOGOODS

SPECIALITIES.

WAREHOUSE AND SHOW ROOM, BURLINGTON BUILDINGS, HEDDON STREET, REGENT STREET, LONDON, W.

TOOGOOD'S IMPROVED PATENT EARTHENWARE COVERED POTS

*Are claimed to be the most perfect
and convenient yet offered to the Trade.*



Owing to the increasing demand for our Patent Pots, we have introduced a Special THIN Series for Dispensing.

These Pots are beautifully glazed and finished, and, being very light, are specially adapted for sending by post.

ORDINARY THICKNESS—										
1 dr.	2 dr.	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	2	3	4	6	8 ounces.
1/6	1/6	1/6	1/7	1/8	1/10	2/2	2/10	3/4	4/6	5/6 or doz.
THIN for DISPENSING—										
$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	2	3	4	6	8 ounces.		
1/7	1/8	1/10	2/-	2/4	3/-	3/8	5/-	6/- per doz.		

TOOGOOD'S BURNT-IN POTS, FOR COLD CREAM, TOOTH PASTE, &c.

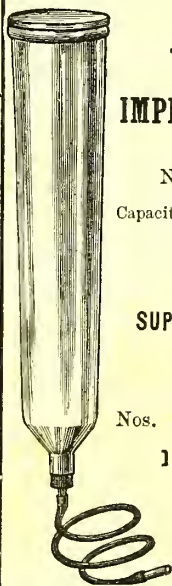
TOOGOOD'S GRADUATED MEASURES.

TOOGOOD'S BOXWOOD-TOP CORK BOTTLES

TOOGOOD'S MEXICAN SQUARES.

TOOGOOD'S CORN-SOLVENT BOTTLE.

TOOGOOD'S POISON BOTTLES.



TOOGOOD'S IMPROVED PERCOLATORS.

Nos.	1	2	3	4	5
Capacity	12	25	66	100	160 ozs.
	2/	3/	4/6	6/	7/ each

SUPPORTS FOR ABOVE IN STAINED WOOD.

Nos.	1	2	3	4	5
	1/9	2/	3/	3/	3/6 each.

NORMAN'S PATENT PILL COVER



The cheapest and most efficient machine yet introduced, combining simplicity with portability, and enabling small quantities of pills to be coated with the same facility as large.

It speedily does its own cost.

Price 3/6 each.

AUSTRALIAN AGENCY AND SAMPLE ROOM:

Mr. A. I. JOSEPH, 250 Pitt Street, Sydney.

Telegraphic Address: "TOOGOOD LONDON"

Telephone No. 3834.

William Toogood's Price Current of Glass Bottles, Measures, Earthenware, Druggists' Sundries, &c., will be forwarded post free upon application.

SPECIAL ATTENTION GIVEN TO SHIPPING ORDERS.

KILNER'S BOTTLES

Address, BOTTLES LONDON.
Having all the Latest Improvements for the Production of Bottles, Kinds, Shapes, Sizes, and Prices to FOREIGN & COLONIAL BUYERS.

Catalogues and Price Lists sent free on application.

That our BOTTLES are the BEST VALUE is SELF-EVIDENT from the FACT that they are MOST FAVOURABLY KNOWN IN ALL THE PRINCIPAL MARKETS of the WORLD.

MINERAL WATER, WINE, SPIRIT, BEER, CONFECTIONERY BOTTLES.

BOTTLING AND CORKING MACHINES. FEEDING BOTTLES.

DISPENSING, FEEDING, PICKLE, DRUG, OIL, SAUCE, VINEGAR BOTTLES.

SYPHONS.
In Azure Blue, Green, or Amber Glass,
In White or Blue Glass.

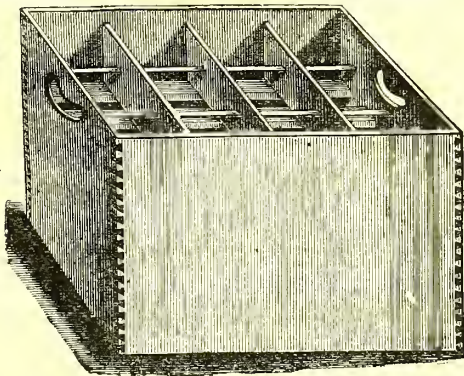
SYPHONS.
Round or Oval, Long or Short Levers,
Bright Metal or Silver-plated Tops.

Correspondence cordially invited. Quotations & Samples sent by return.

KILNER BROS. BOTTLES LONDON

CORKS & STOPPERS
IN
ENDLESS VARIETY.

OUR LEDGE MOUTH BOTTLES ARE THE BEST.



VAN BOX CASES, TRAYS, ETC.

OUR CODD'S BOTTLES ARE THE BEST.

No. 3A GREAT NORTHERN GOODS STATION, KING'S CROSS, LONDON.

FINEST ENGLISH PERFUMERY.

EIGHT PRIZE MEDALS AWARDED.

CONCENTRATED PERFUMES, of great fragrance and strength.

TANGLEWOOD,	WHITE ROSE,	STEPHANOTIS,	16/, 20/, 28/, 48/,
OPOFONAX,	MATHIOLA,	WHITE HELIOTROPE,	and 84/ per doz.

EXTRA CONCENTRATED DITTO, CRAB-APPLE BLOSSOMS, 20/, 33/, 48/, and 60/ per doz.
 "Chief among the fashionable scents of the season is 'Crab-Apple Blossoms,' a delicate perfume of the highest quality and fragrance. Prepared by the Crown Perfumery Company, of 177 New Bond Street."—*Court Journal*.

The Invigorating LAVENDER SALTS (Registered), 16/ and 32/ per doz.

"Under the title of 'Lavender Salts' the Crown Perfumery have prepared a new invigorating smelling salts. Here we have a delightfully fresh perfume of lavender, mingled with something most invigorating and refreshing, a delightful addition to every toilet table, and a most agreeable deodoriser."—*Ladies' Pictorial*.

OPALINE FACE POWDER White, Rose, and Rachel. Packets, 3/6 and 7/ per doz.; boxes, 15/ per doz. Recommended by MADAME ADELINA PATTI.

BEST OLD ENGLISH TRANSPARENT SOAP, unscented, 36/ per gross.

THE CROWN PERFUMERY COMP^y, 177 New Bond St., LONDON.

New Illustrated Price List free by post; also Show-cards on receipt of instructions for enclosure.



No 1246

A lovely Bath and Toilet Water
will be obtained by using

PASTA MACK

TRADE MARK

Hygienic and Cosmetic for beautifying and softening the Skin.

This entirely new and excellent health giving preparation **SOFTENS THE WATER**, gives it a most delicious odour, and

BEAUTIFIES THE COMPLEXION

in a most extraordinary way.

Should be in every Bathroom and Bed room.

To be had of all respectable Chemists and Perfumers throughout the World.

SOLE MANUFACTURER AND INVENTOR

H. MACK, ULM

FREE SAMPLES

Given Away with every Trial Order.

THE NEW REGISTERED PERFUME.

This most exquisite, original, and permanent Perfume has been pronounced by Connoisseurs to be the finest ever produced. It is distilled with the greatest care, and will not discolour the most delicate fabric. The fashionable world has pronounced it unique.

**2/6, 4/6, 7/6,
& 10/6
per Bottle.**

Rose de Indes

**THE ROYAL
PERFUMERY CO**

OFFICE AND SAMPLE ROOM—
165 QUEEN VICTORIA STREET
WAREHOUSE AND MANUFACTORY—

2 & 4 Brickhill Lane, Upper Thames St., London, E.C.4
Wholesale and Export Perfumers and Soap Manufacturers,

Hold the Sole Right of its Manufacture, and have Registered under "The Trade Marks Act," No. 28,217, May 1st, 1902.

THE ROYAL PERFUMERY CO

ALSO MAKE

MATHIOLA, a Perfume of exquisite fragrance.

GLYCERINE AND HONEY BALM, a superior Cosmetic for the Skin. In jars 1/6.
THE "SERVICE" POMADE will positively restore Grey or Faded Hair to its original colour.
 jars, 3/6 and 6/ each.

Obtainable of all Chemists and Perfumers in any part of the World.

GREENSILL'S THE ORIGINAL

When ordering from MONA AND ONLY GENUINE.

Wholesale Houses please specify "GREENSILL'S." **BOUQUET**

SOLE MANUFACTURERS—

T. S. GREENSILL & SON
LOCH PARADE,
DOUGLAS, ISLE OF MAN.

SHEPKOFF & CO.
OTTO OF ROSE

MANUFACTURERS & MERCHANTS,
IZANLIK, BULGARIA.

VIRGIN OTTO ONLY DEALT IN.

REPRESENTED IN ENGLAND BY
GEO. P. KER, 19 Ivy Lane, Newgate St., London, E.C.

CLEOPATRA,

A HYGIENIC
HAIR OIL.
Retail Price, 2/- per Bottle.

EAU LODOIS,

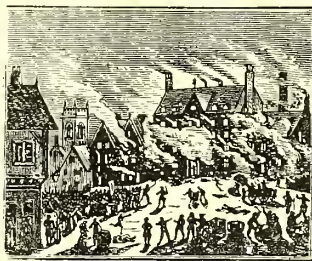
THE ONLY TRUE
HAIR PROMOTER.
PERFECTLY HARMLESS.

As recommended by the Medical
Profession, and testified to by
numerous Genuine Testimonials

For Trade Terms apply to

THE RENCH HYGIENIC SOCIETY,
56 CONDUIT STREET, LONDON, W.

Specialty Awarded Medals, Great
Exhibitions, London, 1851 & 1862.
ESTABLISHED 1730.



The burning of Langdale's Distillery on
Holborn Hill by the Lord Gordon Rioters in
1780, of which an interesting account will be
found in Charles Dickens's "Barnaby Rudge,"
Chaps. 62 and 68.

Essences distilled from Herbs,
Fruits, and Flowers gathered in
their Bloom and Freshness.

E. F. LANGDALE,
Wholesale and Manufacturing
PERFUMER,

Distiller of
ESSENTIAL OILS, NATURAL
AND ARTIFICIAL FRUIT ES-
SENCES, CONCENTRATED
FLAVOURING ESSENCES,

Manufacturer of
HARMLESS COLOURS, &c.
Every description of Flavours for
Confectionery & Mineral Water Trade

Essence Distillery:
72 & 73 HATTON GARDEN,
LONDON, E.C.

Bonded Export Factory:
No. 1 WAREHOUSE.
S. KATHARINE DOCK, E.

A Trial Order invariably leads to
repetition business. Indentors should
specify "Langdale's."

WINTER TOILET REQUISITE

MOODY'S MELLINE
OR
Glycerine + Camphor + Cream,

UNEQUALLED FOR ALL
REDNESS, ROUGHNESS, and
CHAPPING of the SKIN, HANDS, &c.
Registered No. 48649.
IN BOXES at 1d., 2d., 3d., and 6d. each.

PREPARED AND SOLD BY
S. W. MOODY, WHOLESALE, RETAIL, AND
MANUFACTURING CHEMIST
6 WALKERGATE, LOUTH, Lincs.
London Agents—Messrs. F. Newbery & Sons, & Messrs. J. Sanger & Sons



FABRIQUE
DE
MATIÈRES PREMIÈRES DE
PARFUMERIE.

PARFUMERIES DE SEILLANS

(VAR, FRANCE).

Flower Pomades. Perfumed Oils. Flower Extracts.
Essential Oils. Distilled Waters, &c., &c.

OF ALL WHOLESALE DRUGGISTS, OR WHOLESALE ONLY OF
R. C. TREATT, Dunster House, Mincing Lane, London.

IMMENSE SALE.
SOLD EVERYWHERE.

**WOODS' ARECA NUT
TOOTH PASTE,**

As used and recommended by Madame
Marie Roze, the Prima Donna.

PRICE, 6d. and 1s. per Pot.

**CAUTION.—SEE "WOODS, PLYMOUTH,"
ON EACH POT.**

PETROLINA.

IMPORTANT REDUCTION IN PRICE.

Oak Kegs of 1 cwt. ...	4½d. per lb.	Self-opening Tins of 5 lbs. ...	5½d. per lb.
Oak Kegs of ½ cwt. ...	4¾d. per lb.	Self-opening Tins of 1 lb. ...	7½d. per lb.
Oak Kegs of ¼ cwt. ...	4½d. per lb.	Screw-cap Bottles of 4 oz. ...	2/9 per oz.
Self-opening Tins of 14 lbs. ...	4¾d. per lb.	Screw-cap Bottles of 2 oz. ...	1/11 per oz.

NOTICE.

PETROLINA is a pure product of Petroleum deodorized by the action of steam and air and decolorised by filtration through bone charcoal, and there is absolutely no acid or alkali used in its manufacture.

ORDER PETROLINA THROUGH ANY WHOLESALE DRUGGIST OR DRYSALTER.

E. A. DE PASS & CO., 3 Coleman Street, London, E.C. **SOLE AGENTS.**

WARRICK BROTHERS, LONDON.

Warrick Frères, Grasse & Paris. Also New York, 84 Church St.

Have obtained the

Highest Awards at the Adelaide Exhibition

For

Raw Materials for Perfumery

And for High-class Medicated Confectionery.

WHITE AND SOUND TEETH.

JEWSBURY & BROWN'S

ORIENTAL TOOTH PASTE.



This old-established and increasingly favourite Dentifrice has been over Sixty Years before the world. It is warranted to retain its properties and keep in good condition in any climate. The original and only genuine is manufactured solely by

JEWSBURY & BROWN, Chemists, MANCHESTER,

and is distinguishable by the Trade Mark, printed in red and green, a facsimile of which is annexed. Particular attention should be paid to this guarantee of genuineness, as numerous imitations are offered. Sold universally by Chemists and Perfumers, at 1s. 6d. and 2s. 6d.

The Trade and Shippers supplied by the leading houses in London and elsewhere. Bills and Show Cards forwarded on receipt of address cards and directions for enclosure.

BATES'S FRIZZETTA

By the extraordinary property of keeping the **HAIR IN CURL** during the dampest weather and in the warmest assembly or ball-room. It is perfectly *harmless, colourless, and highly serviceable* to ladies who wish to keep their Hair **FRIZZED** or **CURLED**.

BATES'S FRIZZETTA

is now used by **LADIES** in all parts of the World, and is not but an introduction to command a ready and constant sale.

The great

success of

this popular and

useful preparation has

brought several worthless

imitations into the market.

The only Genuine and Original Preparation is prepared by

F. W. BATES, CHEMIST,

Brooks's Bar, Manchester, England.

DEPÔT FOR THE UNITED STATES:

FRANK PYATT, 438 WEST MADISON STREET, CHICAGO.

The word "**FRIZZETTA**" is a fully Registered Trade Mark in the United States, all infringements will be rigorously prosecuted.

REFUSE TO DEAL IN IMITATIONS.

TOILET SPECIALITIES.

REGISTERED

DIANE DE POITIERS.



TRADE MARK.

Pommade de Diane de Poitiers
Crème de Diane de Poitiers
Savon de Diane de Poitiers
Poudre de Diane de Poitiers
Eau Dentifrice de Diane de Poitiers

Eau de Toilette de Diane de Poitiers
Eau Régénératrice de Diane de Poitiers
Eau Valentinoise de Diane de Poitiers

A most attractive Counter Show. Sell readily. Liberal terms to Trade. Prices on application.

MARIE DU BOYER, 41 NEW BOND STREET, LONDON.

REVOLUTION IN THE FLY PAPER TRADE.

It has been observed that for some time the public have become disgusted with the old poisonous fly paper, and have taken somewhat readily to a sticky sort of substitute.

The advertiser has perfected and patented a Fly Paper of this nature, which will certainly be the leading thing in this way in the future. It is a well got-up and effective paper, and is as cleanly to handle as a sheet of note-paper.

The advertiser's own retail establishment last season the sale of this was enormous, as they were freely used by tradespeople (butchers, bakers, grocers, and confectioners), who would not dare to risk the danger from dead poisoned flies about their stock. Owners of houses and cowkeepers were delighted with them, as they spared the animals the torture from this source.

For the nature of the article it cannot very well be stocked by Wholesale Houses for contribution to the Retail Trade, but the Parcel Post will carry them direct from the maker, and Postal Orders will facilitate remittance.

The price is 4/6 per gross (carriage free), but where a large trade is developed more liberal terms will be given.

A sample order for small lot, and while the season is on you are bound to a big thing.

ADDRESS—

S. WILSON, CHEMIST, ST. HELENS, LANCs.

IMPERIAL HAIR DYE.

(REGISTERED.)

ONE LIQUID. — Harmless, Perfect, Permanent, and free from Smell. Clear, and without Sediment.

Guaranteed to contain no lead, or any other noxious ingredient.

BLACK, BROWN, LIGHT BROWN, OR GOLDEN.

TRADE PRICE LIST:—

No 1.	1s. Od.	size	..	..	7s. Od.	per doz. Nett.
No. 2.	2s. 6d.	"	..	..	17s. 6d.	"
No. 3.	3s. 6d.	"	..	..	24s. 6d.	"
No. 4.	5s. Od.	"	..	..	35s. Od.	"
No. 5.	10s. 6d.	"	..	..	78s. 6d.	"

J. BRODIE, 41 Museum Street, **LONDON, W.C.**

WATERSTON'S SEALING WAX.



ELEVEN PRIZE MEDALS.



ESTABLISHED 175

MALDON CRYSTAL SEA SALT.

FOR BATHS.

SALT

A PERFECTLY PURE SALT.

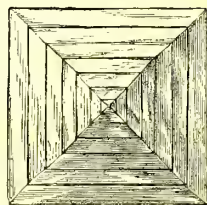
Strongly recommended by the medical profession.

DIRECTIONS FOR USE.

An ordinary teacup full to each Gallon of Water; dissolves more readily than any other Salt, and

REQUIRES NO FILTRATION.

CRYSTAL



COMPANY

Sole Manufacturers:

THE MALDON
CRYSTAL SALT
COMPANY.

London Agents—

LYNCH & CO.,
ALDERSGATE STREET, E.

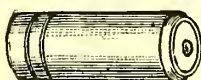
MALDON

9/6 per dozen 7-lb. Boxes Net.

DUKAS & CO., LONDON, W.C.

(20 RED LION SQUARE, HOLBORN),

WHOLESALE BRUSH MANUFACTURERS.



Recognised as the Largest, Best, and Cheapest German Manufacturers.

DUKAS & CO. keep a tremendous stock at their London Warehouses,
which enables them to execute all orders on receipt.

The Stock consists of all Shapes and Patterns of HAIR BRUSHES (with and without handles), CLOTH BRUSHES (with and without handles), NAIL BRUSHES (Wood and Bone), TOOTH BRUSHES, FLESH or BATH BRUSHES, SHAVING BRUSHES, and HAT BRUSHES, SPONGES (carded and loose), also every kind of HOUSEHOLD BRUSHES.

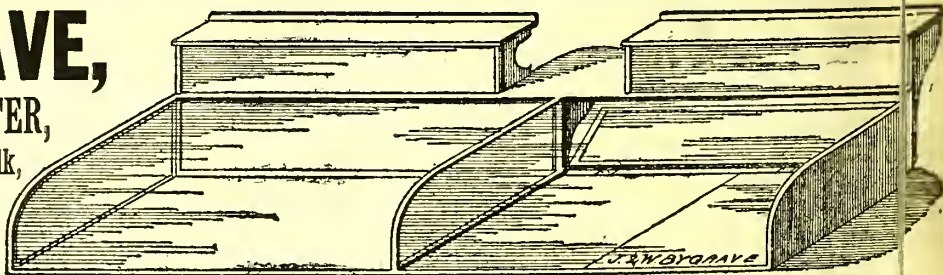
Telegraphic Address—"DUKAS LONDON."

Telephone No. 2727.

BYGRAVE,

SHOP FITTER,

111 Shepherdess Walk,
CITY ROAD,
LONDON, N.



Bent-top plate-glass Counter Showcase, in French polished mahogany, or ebonized with two upright mirror plate-glass fronted shelves, and table in centre for serving over and mahogany falls at back lined with mirror plate glass, inside fitted with crimson velvet trays— if 5 ft. long, 18 in. wide, 8 in. high (total height 13 in.), £5 10s. ; 5 per cent. off for cash.

ESTABLISHED 1810.

H. BROOKS, PEEL & CO., COLLAPSIBLE TUBE MANUFACTURERS

PATENTEES AND SOLE MANUFACTURERS OF THE

PORTABLE METAL SPRINKLER STOPPER,
AND DEALERS IN
GLASS BOTTLES FOR PERFUMERS AND OTHERS.

STEAM FACTORIES:

31 Lyme St., Camden Rd. (Offices), and Bartholomew Rd., Kentish Town, London, N.W.

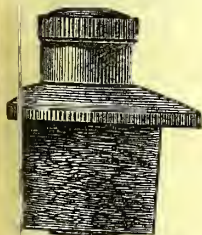
COLLAPSIBLE TUBES OF ALL SIZES.



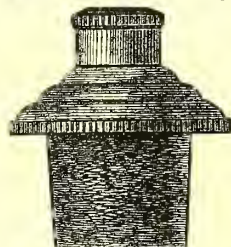
Perfumes, Artist's Colours, Soaps, Cosmetiques, Creams, Oils, Varnishes, &c. These Tubes are inexpensive and portable, and may be applied to many useful purposes besides those above mentioned.

SOLE MANUFACTURERS AND PATENTEES OF

THE PORTABLE METAL SPRINKLER STOPPER,



With Cork fitted thereon for bottles of any size, and having apertures of various dimensions, especially adapted for Perfumes, Hair Washes, Lime and Glycerine Essences, &c. These handsome stoppers give a character and finish to the most ordinary bottles to which they may be applied. Gilt or plain; and put up if required in handsome glass lid boxes, suitable for shop counters and show cases, at moderate prices.



THE "TORSION" PATENT SPRINKLER.

The two designs, Nos. 18A and 19A, are those to which we direct special attention, as sizes being in general use; other sizes will follow promptly to meet all requirements, on which Caps with two or more holes will be introduced to meet the public taste.

Particular attention is called to the latest improvement in our Patent Metallic Stopper, the "Torsion."

This New Stopper adheres to the design of the original patent, which has been universally acknowledged as an ornamental and inexpensive article for the



No. 19a.

No. 18a.

To be, as possessing all the advantages of a "Permanent and Indestructible Stopper, suitable for Bottles of all Sizes and Shapes," with the additional security it affords, that the Cap can never be entirely unscrewed, consequently it cannot be lost. It is specially effective as a Sprinkler, while giving a more prompt and copious, yet economic, supply, through the improved action of the Cap. Such combined advantages, in an article of exquisite finish, have long been desired, and it is submitted for general approval, and its usefulness when tried will be appreciated by all.

Illustrations, Price Lists, &c., can be had on application, or through any Wholesale House in town or country. All Orders received direct will be promptly attended to.

CAUTION.—All Stoppers of our Manufacture are made of Pure Tin, and have the name of H. BROOKS & CO. stamped on the under side of the rim.

All tubes are made of Pure Tin unless specially ordered of Mixed Metal, from the smallest size up to 13 in. by 2 3/4.



R. H. BARRETT,

Flint Glass Bottle Works,
THE OVAL, CAMBRIDGE HEATH, LONDON, E.

For Beauty, Cheapness, and Efficiency R. H. BARRETT'S

WATCH SMELLING-SALT BOTTLES

EXCEL ALL OTHERS IN THE MARKET.

The Caps are all fitted with **INDESTRUCTIBLE WASHERS**, to resist the action of Ammonia and retain the strength of the Salts.

Price, assorted white and coloured, 10/6 per gross (in 5-gross lots).

Chemists' and Perfumers' Bottles in great variety, Plain or Stoppered.

Telegraphic Address—"FOREFRONT LONDON."

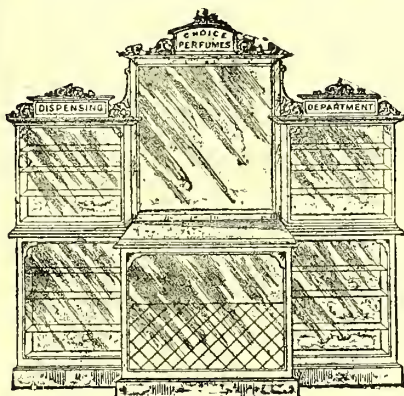
THE CHEMIST" DISPENSING COUNTER.

6 feet long by 2 feet wide .. £24
If the Dispensing Screen only, £12

This handsome Dispensing Counter is manufactured of Spanish mahogany, and of the best workmanship, so that it will stand any climate. The counter has a solid mahogany top, and plate-glass case front. The centre is fitted to take sponge. A mahogany screen on top, consisting of two plate-glass cases, with shelves inside, and a large plate-glass mirror in the centre, and three mahogany tablets with gold writing in ornamental mahogany carved work. The back of screen fitted with small shelves and a glass poison cupboard. The side of counter fitted with strong counter drawers, and a cork drawer, open shelves, &c.

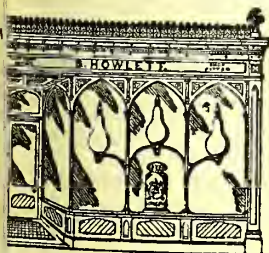
BOWLING & GOVIER

Manufacturers of High-class Shop Fittings,
101 N. ST., BRUSHFIELD ST.
BISHOPSGATE, E.C.



NOTICE TO THE TRADE.

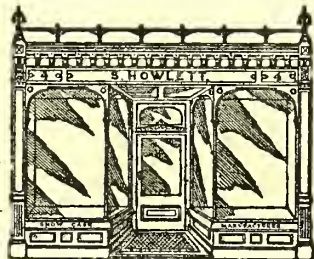
In consequence of inferior Second-hand Goods being sold for our make, we have found it necessary to protect our reputation for best work with a Trade Mark, as above, and unless goods are so stamped we cannot be answerable.



ESTABLISHED 1830.

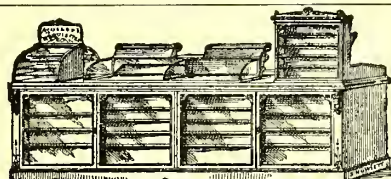
S. HOWLETT, MEDICAL AND GENERAL SHOP FITTER, Shop-Front Builder and Show-Case Maker.

EXPORT ORDERS CAREFULLY PACKED AND SHIPPED.



SHOPS FITTED by Contract, in Town or Country, with every requisite, on the most improved principles, and at lowest prices.

NUMEROUS REFERENCES may be obtained from leading Chemists in all parts of the Kingdom.



A LARGE STOCK of New and Second-hand Fittings and Cases to be sold very CHEAP.

CABINET FITTER to the Pharmaceutical Society of Great Britain.

PLANS and ESTIMATES SUPPLIED.

Manufactory and Showrooms—4 Lindley St., Sidney St., Mile End Road. LONDON, E.

E. NATALI, SHOW CASE MAKER,

SHOP AND OFFICE FITTER,

27 OLD STREET, near Pitfield Street, LONDON, E.C.

Works—HENSON STREET.

SECOND-HAND COUNTERS, FITTINGS, GLASS CASES, &c., always in Stock.

PATRONISED BY HER MAJESTY.

BARBER'S ORIGINAL CRIMSON MARKING INK,

WHICH IS CHANGED BY HEAT TO A JET BLACK.



Put up for Retail Sale in 6d., 1s., 2s., 2s. 6d., and 5s. Bottles.

ALSO

BARBER'S CONCENTRATED LIQUID COCHINEAL

FOR COLOURING JELLIES, CUSTARDS, ETC.

Put up in 6d. and 1s. Bottles.

MANUFACTURED ONLY BY THE PROPRIETORS—

G. BARBER & CO., CLUB MOOR, LIVERPOOL.

Can be obtained through any of the Wholesale Firms in Great Britain, or from FELTON, GRIMWADE & CO., Melbourne; ELLIOT BROS., Sydney and Brisbane; KEMPTHORNE, PROSSER & CO., Inedin and Auckland; FELTON, GRIMWADE & CO., Wellington; or direct from the Manufacturers—G. BARBER & CO., Club Moor, Liverpool, England.



OSCAR SUTTON & CO.,

REGISTERED



PRESTON, LANCASTIRE.

TRADE MARK.

O.S. TOOTH BLOCK, "The Best and Safest Dentifrice"

We have arranged with a first-class Die-sinker to supply us with a large quantity of name-plates, at a uniform charge of seven shillings each, irrespective of the number of letters required. You can have your Name, Business, and Address stamped on each Block, at no extra charge beyond the cost of name-plate, seven shillings, as above.

Orders received through any of the leading Wholesale Houses. Orders direct to us must in all cases be accompanied by a remittance.

One customer, residing in a town of less than 10,000 inhabitants, has just been supplied with tleighth gross, specially stamped.

O.S. Tooth Block, in Patent Metallic Box, retail 1/- each, 7/- per dozen.

GENUINE EMERY, EMERY CLOTH, AND BLACK LEAD.

JOHN OAKLEY & SONS,

MANUFACTURERS OF

Glass Paper, Emery and Glass Cloth; Emery, Black Lead, Emery Wheels, Putty Powder, Crocus, Urn Powder, Tripoli, Rouge, Plate Powder, Steel Polish Furniture Polish, Knife Boards, Brunswick and Berlin Black, &c.

OAKLEY'S WELLINGTON KNIFE POLISH,

Prepared expressly for Oakley's Patent Rubber Knife Boards, Buff Leather Boards, and all the Patent Knife Cleaning Machines. Sold in Canisters with perforated Tops to prevent waste, at 1d., 2d., 3d., 6d., 1s., 2s. 6d., and 4s. each.

OAKLEY'S NON-MERCURIAL SILVERSMITH'S SOAP,

For Cleaning and Polishing Silver, Plate Glass, Marble, &c. Tablets, 6d. each.

OAKLEY'S "POLYBRILLIANT" (Registered).

A Magic Pomade for Cleaning Brass, Copper, Tin, Pewter, Britannia Metal, &c. Never becomes dry and hard like other Metal Paste. Tins 1d., 2d., 3d., and 6d. each.

WELLINGTON BLOCK BLACK LEAD,

In 1d., 2d., and 4d. Blocks, and 1s. Boxes.

WELLINGTON EMERY & BLACK LEAD MILLS, Westminster Bridge Road, London S.E.

Highest award and Prize Medal, Philadelphia Exhibition, 1876; and Boston, 1883. Gold Medal, Crystal Palace, 1884.

ROBINSON & SONS,

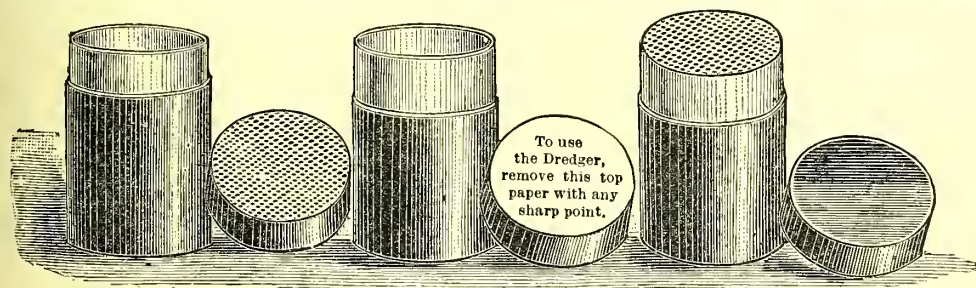
MANUFACTURERS OF CARDBOARD

PILL BOXES

User's Name and Directions printed on the Tops at from 1s. 4d. per gross extra.

INSECT POWDER BOXES.

COVERED IN ANY STYLE TO SUIT PURCHASERS.



A

B

C

PERFORATED ZINC ON TOP OF LID.

"

"

but covered with a printed card, which can be removed to dredge the Powder.

INSIDE" THE BOX, the shoulder being left loose for filling.

MANUFACTURERS OF

ROUND & SQUARE CARDBOARD BOXES

USED BY

Druggists, Drysalters, Homœopathists, and Confectioners.

ESTABLISHED 1839.

Honourable Mention for Cardboard Boxes, International Exhibition, 1862.

WHEATBRIDGE MILL & HOLMBROOK WORKS, CHESTERFIELD,
AND
55 FANN STREET, ALDERSGATE STREET, LONDON.

BOORD & SON,

RECTIFYING DISTILLERS & WINE MERCHANTS,

ALLHALLOWS LANE
and
BARTHOLOMEW CLOSE, } LONDON, E.C.,

OFFER LOWEST QUOTATIONS, ON APPLICATION, FOR

FINEST RECTIFIED SPIRITS OF WINE

Methylated Spirit and Finish; Finest Orange Wine, Sherres, and Malagas for Medicated Wines.

THE ORIGINAL GENUINE EAST INDIA OIL OF MUSTARD SEED

Is strongly recommended as a safe and effectual remedy in cases of

RHEUMATISM, GOUT, RHEUMATIC GOUT, SCIATICA, LUMBAGO, HEADACHE, PAINS IN THE STOMACH, SPASMS, BRUISES, CHILBLAINS, &c.

RETAIL IN BOTTLES, 1s. EACH.

Imported by J. H. & S. JOHNSON, Wholesale Druggists, 6, 8, and 10 WHITECHAPEL, LIVERPOOL

Wholesale Agents: London—Newbery & Sons, and Bourne, Johnson & Lamer.

BURROUGHS
Spiritus Rectificatus, P.B.

**SPIRITS
OF WINE**
5 Gall. 56 o.p. at
19/4 Cash.

The BEST English Grains Spirit,
Free from Foul Oil,
Chemically Pure.
Special Quotation for Quantity.

ORANGE

WINE,

MEDICAL SHERRY.

AT LOWEST PRICES.
JAMES BURROUGHS
LONDON, E.C.

W. H. B. REFINED } W. H. B. WHITE } **BEESWAX.**

Bernard Dyer, B.Sc. (Lond.), F.C.S., F.I.C., Analytical and Consulting Chemist, 17 Great Tower Street.

I have analysed a cake of Wax stamped W.H.B. sent to me by a London House on behalf of Messrs. W. H. Bowdlear & Co. of Boston, Mass., U.S.A. It consists of pure bleached beeswax unmingled with paraffine, fat, or other of the various materials with which beeswax, and especially white wax, is commonly adulterated.

Bernard Dyer, B.Sc., F.C.S., F.I.C., Member of the Society of Public Analysts.

CABLE ADDRESS—"BOWDLEAR BOSTON."

W. H. BOWDLEAR & CO.,
147 Pearl Street, BOSTON, MASS., U.S.A.

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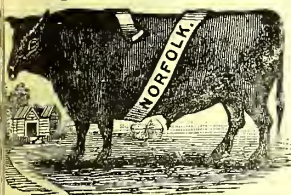
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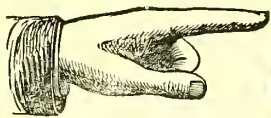
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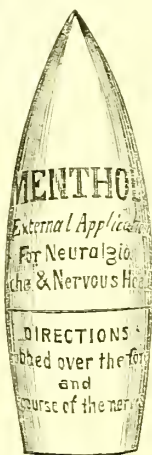
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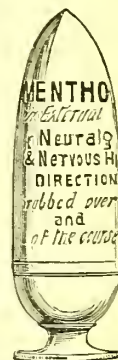


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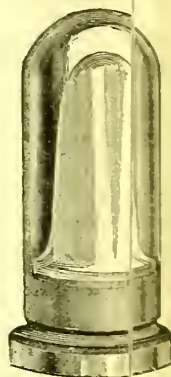


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A Dummy Cone given free with all orders of 20s., or two if 30s. order is placed.

No.	Description.	Price per doz.
13A	1s. Vegetable Ivory, 12 in a box, Acorn Shape	5 9
14	1s. Pyramid Shape, each in a box	6 6
14A	1s. Ditto 12 in a box	6 3
14L	1s. or 1/6 Ditto extra-sized Cone 12 in a box	7 6
15	6d. Cardboard Case, 12 in a box	3 0
17L	1s. Draughtsman Shape, Boxwood on extra large	6 6
17	1s. Ditto Ebony only	6 3
17s	6d. Ditto Boxwood	4 0
18	1s. Combination Pin cushion and Menthon	7 0
19	6d. Boxwood, Egg Shape, on elegant Card	3 0
20	1s. Smelling Bottle Menthon	7 6
21	1s. Menthon on Boxwood stopper, cover with glass shade, very attractive each in a box	6 6
21A	1s. Ditto Ditto 12 in a box	6 3
23	6d. Ditto Ditto each in a box	4 0
23A	6d. Ditto Ditto 12 in a box	3 6
24	6d. Boxwood, Bottle Shape, very attractive	3 6

SHIRLEY'S 2nd QUALITY, PUT UP FOR THOSE WHO WANT CHEAP GOODS.

	Per Dozen	Per Gross		Per Dozen	Per Gross
2d. No. 100.—Polished Willow Box	1/5	13/	4d. No. 103.—Boxwood Pedestal (large)	2/9	2
3d. „ 101.—Willow Acorn	1/10	17/	4d. „ 104.— „ Barrel shape	2/9	2
3½d. „ 102.—Boxwood Pedestal	2/4	24/	6d. „ 105.— „ Button shape	3/4	3

These prices are net, and the boxes have not the printed directions on them.

EAU DE COLOGNE

In flat watch-shape Bottles, with Nickel Cap.

Each Bottle is neatly labelled, and contains an ounce of best quality Perfume.

A GOOD SELLING LINE.

4s. per doz., 12 in a Box.

FULLER'S EARTH

Attractively put up in cardboard boxes, with label (3 colours).

Can be had either White Precipitated, as preferred by many, or ordinary Prepared Fuller's earth.

Price, 3s. per dozen.

Special terms for large quantities.

Order as A1 Brand.



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The best Bottle of the Season: it has a good base, and stands well; is attractively labelled, and enclosed in a hinged outer. Filled with strongest ammonia, and agreeably scented.

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Special quotations for 5 or 10 gross lots.

A similar Bottle, only stoppered, 4s. per dozen, 43s. per gross.

ORDER AS A1 BRAND.

ARTHUR W. SHIRLEY, 30 Paternoster Square, LONDON, E.C.

'KINGZETT'S BACTERICIDE.'

THE "SANITAS" COMPANY, LIMITED,

beg to inform the Trade that such alterations have been made in the Advertisements respecting this Preparation as meet the requirements of the

INLAND REVENUE OFFICE,

and exclude the Article from the operation of the Medicine Stamp Act.

As now sent out and Advertised, therefore,

'KINGZETT'S BACTERICIDE'

may be sold WITHOUT STAMPS.

It is requisite, however, for Chemists and Druggists to Register the Sales of this Preparation, because it contains a Scheduled Poison.

"KINGZETT'S BACTERICIDE"

is put up in **2/-** blue Pint Poison Bottles:
to the Trade **16/-** per dozen, less the
usual discounts.

THE TRADE ONLY SUPPLIED.

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Letchford's Buildings, Three Colt Lane,
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G. T. KINGZETT,
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SPECIALLY
PREPARED

LOOFAH

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By this process the raw Loofah is converted into a nice white soft material, which is capable of being made into various articles.

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BATH GLOVES.

BATH BELTS.



MANUFACTURED OF LOOFAH, PREPARED AND BLEACHED BY A NEW SPECIAL PROCESS.

ELSTE'S LOOFAH SOCKS absorb all the moisture from rain, snow, or perspiration, keeping the feet warm and dry in winter and cool and comfortable in summer. They can be cleaned with soap and water thus rendering them superior to any at present in the market.

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ELSTE'S LOOFAH BATH BELTS are the essence of comfort, and can be used with far greater ease than the Back Brush now in existence (see illustrations).



USING THE BELT.

PRICES:

Elste's Loofah Socks, wide and narrow, per dozen pairs, 6s.

Elste's Loofah Bath Gloves, 6s. 6d. and 7s. per dozen single gloves.

Elste's Loofah Bath Belts, 13s. 6d. and 14s. 6d. per dozen.



USING THE BRUSH

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AGENCIES OF ALL KINDS UNDERTAKEN
ON FAVOURABLE TERMS.

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Per dozen, 3/6, 4/-, 4/6, and 5/-

LESS USUAL DISCOUNT.

6 dozen assorted, in handsome glass-top Box, free, or 3 dozen at an extra charge of 6d.

LOOPHAS

Good Quality and Value, at 3/6, 4/9, and 8/- per dozen.

EAU DE COLOGNE (PIERRE DAVIS)

1 oz. 4/6 per dozen; 2 oz. 8/- per dozen.

A LARGE and VARIED ASSORTMENT of SPONGES always IN STOCK. Inspection solicited, or write for samples before ordering elsewhere.

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IN PHARMACY

QUALITY IS OF FIRST IMPORTANCE

THE contest between true pharmacy—between the skilled chemist and druggist and the purely commercial store—that is now being waged throughout Great Britain, reflects the contest which manufacturing Pharmacists of skill and integrity are waging against the quacks and charlatans. The protection of the honest retailer, and the security of the honest manufacturer, are in the superior quality of their goods. The success of the Physician and Surgeon depends chiefly upon the integrity of the medicines and appliances they employ, and they, as well as the public whom they serve, have already learned to be distrustful of the quality of "Cheap John" Pharmaceutical preparations. Our efforts are wholly to further the interests of legitimate and progressive pharmacy, and for that reason we adhere strictly to the policy of making but one quality, and that **the best**.

The status of the whole plaster business is well known by the analysis of Belladonna Plasters, the leading article on the list of spread goods, made in March, 1886, by Dr. Albert P. Prescott, Professor of Chemistry at the University of Michigan, and President of the American Chemical Society, from goods purchased by him in open market. The assays were made by the same process, in parallel operations, for the quantity of total Belladonna alkaloids, estimated as atropine, and the results showed that our Belladonna Plasters contained more than double the quantity of atropine contained by any other make, and also corresponded with the standard laid down by the British Pharmacopœia and United States Pharmacopœia.

The results of Dr. Prescott's analysis confirm those previously made by Professor Doremus and Dr. Battershall, and lately by Mr. William Rupp, F.C.S., at their laboratories in New York City, and by S. W. Williams, at the laboratory of the College of Pharmacy. Our Plasters may, therefore, be depended upon to afford the full and prompt therapeutic effect contemplated by the official formula and expected by Physicians. That the same effect cannot be expected from the inert preparations put upon the market by other makers is fully proven by the analysis alluded to, and what is shown to be true of Belladonna is equally true of all other goods on the list.

Recently the trade has been favoured with what purports to be a new series of analyses of Belladonna Plaster, which carries upon its face the evidence of "intent to deceive" on the part of those who instigated it. The motives that prompted the work can easily be discovered by the common sense of every man possessing instincts of ordinary honesty. It was evidently done and made public in the expectation of establishing an assumed standard, and thus covering the fraudulent character of the goods which the instigators of the scheme are really offering to the trade at large. This is an old trick practised by knaves in almost every other branch of trade, but which has never been tolerated in Pharmacy.

We do not deny but what reputable chemists may have been supplied direct with "stuffed" Belladonna Plaster, or directed to obtain their supplies from some source which had previously been stocked with such goods, nor would it be impossible to make a debased counterfeit of our goods placed in our own container, and set it in the way of unwary chemists. We make no exhibition goods. The goods which we submit to jurors at exhibitions are taken from our regular stock, and the goods which chemists analyse for us are always bought by them in the open market without even a suggestion from us as to where they should purchase them. We have repeatedly demonstrated the

SUPERIORITY OF OUR ABSORBENT COTTON LINT AND GAUZE,

and the utter lack of absorbency which characterises several other makes. This is a matter easily tested by dropping a bit of the cotton or lint into water, and noting the rapidity with which it sinks to the bottom. Extreme absorbency is important when absorbent materials are desired at all. Some of our competitors are crafty enough to purchase our own lint and cotton, and re-wrap them under their own labels, for the purpose of making tests, but uniform excellence will be found only in goods bearing our brand.

THE PERFECTION OF OUR GOODS

means an outlay of time and money which forbids our attempting to compete for the "Cheap John" trade, but no other manufacturer can place upon the market goods equal in quality to our own, at as reasonable prices as prevail throughout our line.

WORTHY OF CONSIDERATION

is our reputation as originators and organisers of this special branch of pharmaceutical chemistry, which has been adopted by every nation, and which has been imitated and pirated by every so-called competitor and neophyte, down to the last accession to their ranks. We have been and shall continue to be aggressive. We are jealous of the work created by us, and with which we are identified throughout the world, and therefore will compel manufacturers of goods in our line to respect and maintain the integrity of official formulæ, or expose their deficiencies. Competition is wholesome only when based on an honourable respect for established standards, especially in Pharmacy. The opportunity for making inferior medicated goods is too great, and we shall consistently and persistently expose these who manufacture goods that belie the label.

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Proprietors of Seabury Pharmaceutical Laboratories.

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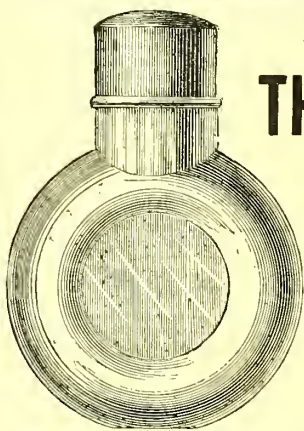
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EXTRAORDINARY CHEAP LINE!! THE WATCH SMELLING-SALT BOTTLE

PLAIN OR FLUTED.

These Bottles are fitted with **BEST SCREW NICKEL CAPS**, lined with Waxes, and are the most wonderful value ever offered. A trial order will prove the fact.

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GLASS BOTTLES OF EVERY DESCRIPTION,
 Either Plain or Stoppered, made to any pattern and in any colour required.

The PIONEERS of A1 QUALITY at Reasonable Prices.

Quotations, post free, upon application, to any part of the world.

HIGHEST AWARD, ADELAIDE EXHIBITION, 1887





DISPENSING BOTTLES

PRIZE MEDAL,



SYDNEY, 1879.



QUININE TINTED. "L" BRAND.

Warranted Finest Quality Metal, Good
Mouths, and Correct Measure.



CATALOGUE No. 42a. In any quantity from Stock.

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S... 1 oz. 1½ oz. 2 oz. 3 oz. 4 oz. 6 oz. 8 oz. 10 oz. 12 oz. 16 oz. 20 oz. 24 oz. 32 oz. 40 oz.
P Gross 9/- 9/6 10/- 10/6 10/6 11/6 11/6 16/- 17/- 21/- 25/- 27/6 36/- 40/-

Discount : 10 per cent. Monthly, 5 per cent. Half-yearly.

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Carriage paid to Bristol, Glasgow, Liverpool, or London.

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P Gross 7/6 8/- 8/- 8/6 8/6 9/6 9/6 12/6 13/6 16/6 20/- 22/- 29/- 33/-

BEST GREEN FLINT FLATS OR OVALS.

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STRICTLY NET CASH.

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25 Years' Experience Valuation for Probate, &c.

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3s. 6d. for fifty words; 6d. for every 10 words beyond.

TO Manufacturing Chemists and Pharmacists.—For sale by private treaty, a large and miscellaneous assortment of Plant, in excellent condition, comprising Copper Vacuum Pan (200 gallons), with steam coil complete, with fittings; powerful Air Pump on cast iron frame, with double driving pulleys; 2 Hydraulic Presses and Copper Plates, with pump fixed on cast iron tank, geared and double-driving pulleys; Johnson's Filter Press with taps, valves, and pumps for washing or exhausting; Steam Donkey Pump, with brass ram; Steam Stills and Condenser, Jacketed and Evaporating Pans, Porcelain Filters, sundry Iron and Galvanised Tanks, from 20 to 200 gallons each; also sundry apparatus, and quantity Doulton's Chemical Ware, &c., &c.; Laboratory Fittings, balance, apparatus, and sundry chemicals. For particulars, apply to J. W. Drysdale & Co., 8 Creechurch Lane, London, E.C.

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3s. 6d. for fifty words; 6d. for every 10 words beyond.

ADVERTISER wants a steady young man to join him in country Business; if not passed exam. no object. "Chemist," 4 Lodge Street, Bristol.

WANTED, an English Gentleman, with a small capital; (practical knowledge of Pharmacy necessary, but qualification not essential), to join a French gentleman (with moderate capital) as a Partner for a new kind of business (in London). Apply, by letter, Mr. Henry, 40 Glasshouse Street, W.

WANTED, a young man to join advertiser in an old-established lucrative business, turning over about £1,000 per annum; rent more than cleared by post office; for half share £500 required; a qualified Assistant treated with a view to succession. Apply, in first instance, T. W. Robinson, Chemist, Myton Place, Hull.

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LINCOLN.—A Business returning £1,000, in best position, to be sold for valuation, under peculiar circumstances. Apply to Mr. Floyd, Valuer, Bury St. Edmund's.

TO be disposed of, profitable and well-established Mineral Water Business, Vans, Horses, Machinery, Plant, &c.; Leeds; price £1,100; this is a genuine concern. Apply, J. W. Watson, Estate Broker, 1 Albion Street, Leeds.

FOR Sale, a Chemist's Business in densely populated part of Leeds; turnover £3 weekly, which might be considerably increased; present owner retiring from business; rent £32; price £225. Apply "B," Hirst, Brooke & Hirst, Leeds.

MORLEY, near Leeds.—For sale, through death of the Proprietor, a good Mixed Drug Business; good position, good house, and large warehouse; rent £35. Full particulars on application, Mrs. M. Auty.

FOR disposal, in Yorkshire, a good old-established Mixed Business; returns between £600 and £700; well-fitted shop and every convenience; house large and convenient. Price, &c., on application to "Proprietor Mr. John Clark, 11 Melbourne Terrace, York.

FOR immediate disposal, an old established Mixed, Dispensing, and Prescribing Business in a large town in Glamorganshire; situated in main thoroughfare; only two other chemists; proprietor retiring from business; price £100 or valuation. Apply, J. H. Ofc of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

IN a well-populated middle-class Western Suburb, a very profitable ready-money Retail, Dispensing, an Prescribing Business, yielding a net profit of about £2 per annum, which will increase with personal attention shop neatly fitted and well stocked; price £375. Apply, Thor & Co., 79 Queen Street, Cheapside, London.

THETFORD, Norfolk.—Good shop, pleasant and roomy house; long established an profitable Business; price under £300; buyers can have card to view on application to Mr. Floyd, Valuer, Bury St. Edmund's. In consequence of death of the proprietor an immediate buyer will be liberally treated.

FOR Disposal.—South Africa.—An inland town famed for the relief of consumption; Retail, Prescribing, and a little Wholesale; good position in centre of town; little opposition; net profits about £300; English liquor accepted by Cape Government. Apply to Messrs. Evans, Lescher & Webb, 60 Bartholomew Close, E.C.

IN a rising Suburb.—Retail, Prescribing, an Dispensing Business, with good sale of Proprietar; no opposition; average returns £450, increasing; good stock and fixtures; 8-roomed house in good repair on lease price £450. Address, J. D., care of Mr. C. Martin, Messrs. Law, Son & Thompson, 11 Aldersgate Street, E.C.

SOUTH DEVON.—Dispensing and Light Retail; best business position in rapidly increasing seaside town; shop handsomely fitted, mahogany, double-fronted; house large, adapted for letting, side and back entrance, garden; rent £50; price £600; ill-health sole reason for disposal. "Pharmacist," Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

TO Close an Estate.—Must be disposed of immediately, a first-class old-established Retail and Dispensing Business, near Birkenhead; healthy situation; capital opportunity for an energetic person. For further particulars, apply to John Thompson, Wholesale Druggist, 53 Liverpool Street, Liverpool, or to Roose, Mahon & Howorth, Chartered Accountants, 26 North John Street, Liverpool.

RETURNS £400; good profits; no premium must be sacrificed immediately; stock and fixtures only to be taken at valuation, about £200; present owner cannot attend to it, having other occupation; large corner house in main road, pleasant and convenient suburb, largely increasing; upper part let, so will suit a single man who is a good prescriber and tooth-extractor. For address, apply by letter only to Martien Levien, Esq., Queen's Road, Teddington.

IN the main thoroughfare of a large manufacturing town in the Midland counties; a capital Retail and Prescribing Business; in the same hands eight years; last three under management: returns nearly £1,000; rent £30; price £600. Apply to Mr. Hope, care of Parson C. Baker, 8 Stockbridge Terrace, S.W. A small Wholesale can be sold with the same if desired for the value of the stock and fixtures.

IMEDIATELY, a genuine suburban cash Retail, Dispensing, and Prescribing Business; good 7 roomed house and shop; main road; no opposition; good opening for dentistry; proprietor taking larger business; price £290, or reasonable offer; open to the strictest investigation; letters only. "Alpha," Messrs. Langton, Wholesale Chemists, Upper Thames Street.

MIDDLESEX (15 miles out).—Unopposed high-class Dispensing Business; same hands many years in healthy situation; rent £35, good house; returns about £20; net profit £250; sole cause of sale purchased much better business; price £50. **NORFOLK**.—Retail and Prescribing trade; returns £400; good house and garden; same hands 22 years; price £300, £100 can remain. Apply to Blox & Co., 30 Jewry Street, Aldgate, City.

CHEMIST'S Business.—Capital position in City; Prescribing and Dispensing; long lease, rent moderate; in class returns, yielding £300 per annum clear profit, could be much increased; handsomely fitted shop, well stocked; extensive connection, and a sound investment for a S.A. or good prescriber; price £800. Apply, Messrs. Nolls & Golding, 63 Haymarket, S.W.

ESTABLISHED Drug and Spirit Business.—To be sold (in consequence of death of the owner), the established Chemist and Druggist's business, with fully licensed vaults attached, carried on successfully for so many years by the late Mr. George Greenhow at Knottingley, Yorkshire. Premises very commodious, and in good position; immediate possession. Apply on the premises, or to Bentley & Sons, Auctioneers, Knottingley.

W. P. BLYTH, Lichfield Road, Birmingham. Druggist and Drysalter. The trustees under the Deed of assignment for the benefit of creditors have the above excellent Business for disposal by private treaty; the premises are good and in a commanding situation, and without the Bough; income (exclusive of book-debts, which could be taken by arrangement), estimated at £650. Apply Messrs. Sharp, Parsons & Co., or Messrs. Dixon & Russell, Chartered Accountants, Colmore Row; or Messrs. Edwin Jones & Son, Solicitors, 18 Temple Row, Birmingham.

SAFFORDSHIRE.—A thoroughly sound, old-established Business, in present hands 21 years; returning about £12 per week at profitable prices; shop well fitted in mahogany, double plate-glass windows; convenient hot and well-arranged business premises, centrally situated in populous town; rent £45; price for cash £400, or stock and fixtures at valuation; stock may be reduced to suit purchaser; vendor having bought a larger trade, personal inspection and investigation invited. Apply, X., care of W. J. & Co., Wholesale Druggists, Coventry.

SITUATIONS OPEN.

6d. for fifty words; 6d. for every 10 words beyond.

WANTED, an experienced Assistant; outdoors; please state usual particulars. Address, "Chemist," 68 Northgate, Wakefield.

WANTED, an Improver or Junior, in a Dispensing and Mixed Business; time for study. Apply to Christopher Clayton, Qualified Chemist, 167 Cowley Road, Oxford.

JUNIOR Assistant required, age not under 20, of good business habits, for a light retail; time allowed for study. Apply, stating salary required, age, height, and reference, enclosing carte, to W. Jacobs, Chemist, Medical Hall, Guildford, Surrey.

SINGLE Qualified Assistant, in June, to take charge of small business in Kent; Wesleyan and abstainer preferred; hours 8 to 8, 4 on Thursdays; must be able to extract; state salary. "Ergo," Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

WANTED immediately, a Junior Assistant; outdoors; qualified; good dispenser; about 22; one accustomed to a brisk counter trade preferred; hours easy; no Sunday duty. Apply, stating salary and giving usual particulars to F. J. Holdcroft, Chemist, Church Street, Malvern.

WANTED, for a small Branch, a pushing energetic Assistant, who will give his whole attention to business; state age, experience, references, height, salary (outdoor). "Delta," Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

INDOOR Assistant for a country business; aptitude and porter kept; must be a good writer; would be required to assist with the books; a dissenter and abstainer preferred. O. W., Barron, Harveys & Co, Giltspur Street, E.C.

J. FLOYD & Co., Bury St. Edmund's, will require in June an Assistant, to take charge of retail counter; Minor qualification; unquestionable character; state terms and full particulars of experience.

WANTED, Assistant about 24, with knowledge of Wholesale, for South Africa; 3 years' engagement and passage paid. Apply to B. G. Lennon & Co., 11 Edmund Place, Aldersgate Street, E.C.

A QUALIFIED Assistant wanted; must be well up in Dispensing and a good Prescriber; unfurnished apartments free. Apply, stating full particulars, to R. A. Gardner, 485 King's Road, Chelsea.

WANTED, immediately, one or two Qualified Assistants for China and Japan, with knowledge of French preferred; liberal terms. State fully previous experience to Dakin Bros., Creechurch Lane, E.C.

WANTED, an Improver, for a good-class country business; must be steady and well recommended; churchman preferred. Apply, stating age, experience, salary required, &c., to Iliffe & Sons, Pharmaceutical Chemists, Nuneaton.

BOURNEMOUTH.—Qualified Assistant required. State salary required, give usual particulars, and enclose photograph, to Gilbert & Hall, Homoeopathic Chemists, Bournemouth.

A THOROUGHLY competent Manager for a Dispensary in the East; first-class experience and good knowledge of general business indispensable; 30 to 35; liberal salary and interest in business. Apply, stating full particulars, M.D., 426, Messrs. Deacon's, Leadenhall Street, E.C.

PUSHING Manager wanted for Drug business, paints and oils kept; hours 9 to 9; fortnightly half-holiday allowed; married man could live on premises. Apply, J. M., care of Messrs. Lismay & Sons, Newcastle-on-Tyne.

IMMEDIATELY, a qualified Assistant, accustomed to good-class retail and dispensing. Applicants will please state age, height, references, and salary required, also enclose carte (which shall be faithfully returned), to W. H. Solomon, 40 Market Street, Falmouth.

WANTED, a young qualified Man, to take part in management of a small business in the North of England; prescribing and tooth-extracting, &c. Apply, "Pharmacy," care of John Ismay & Sons, Wholesale Druggists, Newcastle-on-Tyne.

WALTER DEE & CO., 239 Hammersmith Road, W., are in want of good Counter Assistant; one with a knowledge of photographic or electrical goods preferred, but not absolutely necessary; personal application if possible; write for appointment.

WANTED, at once, Assistant (indoors), aged about 24, to take partial management of branch; good salesman, prescriber, and dispenser, and able to extract teeth; total abstainer and good references indispensable. Apply, stating salary, &c., "Chemist," 43 King Street, Plymouth.

WILLIAM HESELTINE & SON, Wilson Street, Finsbury, E.C., are open to engage a first-class man to introduce and appoint Chemists as Agents for their Teas; liberal terms to one having necessary qualifications (see advertisement appearing in this issue). Apply by letter, as above, in first instance.

A N old-established firm in the East is anxious to undertake Agencies for specialities connected with the Drug and allied trades; exceptional facilities for introducing goods; wholesale and retail connection. Catalogues, prices, &c., to "Pharmacy," Dakin Bros., Cree Church Lane, London.

thoroughly qualified and experienced 33 years' experience 8 feet 6 inches tall aged 33 years

DISPENSER required by medical man; large country village; pharmacy qualification preferred; pull teeth, keep books, surgery work; might open surgery as ordinary general chemist's shop; young, good-looking, energetic man preferred; small stated salary at first, afterwards based on results. A, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C. Usual bond.

AN EXPERIENCED active indoor Assistant of good address and well accustomed to the routine of a first-class Chemist's business, where several assistants are kept; he will have to be well up in practical dispensing; to one seeking a permanency, where good conduct and business capabilities will be duly appreciated, it offers that advantage, but none need reply whose character will not bear the strictest investigation. Apply, W. J. F., 19 Grange Mount, Birkenhead.

SITUATIONS WANTED.

1s. for twelve words; 6d. for every six words beyond.

OUTDOOR; Wholesale or Retail; aged 21. "Alpha," 58 Longford Street, N.W.

AS OUTDOOR Assistant; 12 years' experience; aged 30. "Minor," 86 Brixton Hill.

SURGEON'S Dispenser or part time; small salary. H, 62 Beckway Street, Walworth.

AS Turnover or Improver; excellent references. R. C. Mason, Bromsgrove.

MANAGER or Assistant; good references; married; aged 36. "Chemist," 11 Hicks Road, Seaforth, Liverpool.

JUNIOR; good Salesman, careful Dispenser; active and energetic. P. Johnson, Chemist, Godalming.

JUNIOR; aged 22; 6½ years' experience. Branford, 27 Havelock Road, Hastings.

AS ASSISTANT or Dispenser; experienced and steady (outdoors preferred). "Chemist," 32 Kennington Park Road, S.E.

JUNIOR; Minor qualification; accustomed to good Retail and Dispensing business; excellent references. T. H., 3 Grey Friars, Leicester.

JUNIOR; in good Dispensing establishment. Apply, G. Lewis, 45 High Street, Brecon.

AS ASSISTANT; qualified; disengaged middle June; London or large town; outdoors preferred; aged 22. Clarkson, High Row, Reeth, Yorkshire.

TOWN Traveller; experienced amongst surgeons; gentlemanly address. "Tact," Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

AS ASSISTANT; in or out; town or country; aged 35; married; good references. "Chemicus," 14 Field Street, Everton, Liverpool.

LOCUM-TENENS.—Previous to engaging, write a post-card for terms to "Pharmacy," 7 St. Stephen's Road, Rotherham.

LOCUM-TENENS; qualified; 12 years' experience; excellent references; abstainer; terms moderate; disengaged. F. W., 12 The Grove, Ealing, W.

DRUGS.—Assist in Warehouse, or Packer; aged 30; 15 years' experience. T., 319 Roman Road, North Bow.

MANAGER or Dispenser, Chemist or Surgeon; temporary or permanent. Dunkerly, M.P.S., 88 Morton Road, Essex Road, Islington, N.

JUNIOR or Dispenser; Minor and Hall qualifications; 8 years' experience; aged 25; height 5 feet 8 in. W. T., 189 Upper Parliament Street, Liverpool.

AS TEMPORARY; qualified; moderate terms; first-class references; disengaged. X., 80 Lumley Road, Skegness.

MANAGER or Senior, outdoors (permanency); thoroughly competent; highest references; height 6 feet; aged 30; married. "Manager," Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

DISENGAGED June 4th; Junior or Dispenser; aged 20; 6 years' first class experience; abstainer. Francis Milborne, Port Sherborne.

IMPROVER or Junior Assistant; town preferred; 3 years' experience; aged 24; height 5 ft. 11 in.; passed Preliminary; abstainer; time for study; outdoors. Ayl, Bayliff, Kirkby Lonsdale, Westmorland.

RE-ENGAGEMENT wanted by an energetic man, with tact and good practical experience in mixed businesses; satisfactory references; aged 34; height 5 ft. 11 in.; single; abstainer; unqualified. "Chemicus," 18 Wellington Street, Gravesend.

MANAGER or Assistant (outdoors); 7 years' experience as manager of branch; efficient salesman, prescriber, tooth-extractor; aged 28; satisfactory references; good address; at liberty in June. E. S. T., care of Mr. Robinson, 67 Astley Street, Dukinfield.

TRAVELLER.—An Irish Chemist desires to represent an English Wholesale Firm for all Ireland 18 years' experience; highest references, and security if necessary. Address, 219/22, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

WANTED, a situation as Dispenser and Looker-keeper; can Visit and attend Midwifery; full curriculum; outdoors preferred; good testimonials and references. Address, stating terms, &c, W. T., care of Rev. W. Tiner, Howley View, Batley, Yorks.

MISCELLANEOUS.

Special charges are made for Advertisements under this heading which can be obtained on application.

MR. HARRY H. DAKERS (late with Messrs. F. H. Paulding & Co., of London and Adelaide) is about to take up his residence in New York to represent Messrs. Brand & Co., of Mayfair, Messrs. Bidwell Bros., of Ainsty, and will be glad to hear from any other firm who may desire to appoint an Agent in the United States and Canada. Apply until August to 2 Gresham Buildings, London, E.C.

YORKSHIRE Relish.—A reward of five pence will be paid to any person first sending the address of a firm calling themselves C. Lazenby & Co., who are selling sauce under the name of "Yorkshire Relish," such words being the registered Trade Mark and exclusive property of Messrs. Goodall, Backhouse & Co., of Leeds. Full information to be given to the Trade Mark Protection Society, 1 Astle Street, Holborn, London.

BOXES.—Light Wood Boxes, cheapest, strongest, and best, suitable for packing all kinds of articles for transmission by post or rail; all sorts and sizes of boxes made to order; samples and price-lists, 4 stamps. Write for sample, stating size required, to T. Casbon, Millfield Box Works, Peterborough.

SHARES.—For sale, 40 £5 shares (£2 10s paid on each) in Henry Lamplough & Company (Limited), proprietors of Lamplough's Pyretic Saline; very established business, paying regular dividends of 10 per cent; will accept £2 each for prompt settlement. Letts, B., 100 Caledonian Road, N.

750 STRONG Tin Cans, holding 15 imperial gallons, are to be sold at greatly reduced price, more than 25 per cent. under cost; suitable for manufacturing chemists, &c., for carrying oils, drugs, &c. Can be inspected at Mr. John Rittmeister's, 17 Great St. Helen E.C. Travellers wanted.

OIL EXTRACTOR.—A new and complete apparatus for the Extraction of Oil by chemical process can be seen fitted up; a bargain will be made to an immediate purchaser. Address, K 6, The Yorkshire Post, Leeds.

WANTED, to purchase a Patent Medicine (Proprietary Article, showing sure profits of about £100 a year. 224/6, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

YEAST.—Wanted, Chemists or others to take Agency for selling compressed (dry) Yeast, large use by bakers, confectioners, hotels, and private families. For terms and particulars apply to W. Barnett, Brewer, London.